



Estonian University of Life Sciences

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**Kodanike rahulolu roheliste ja siniste ruumide ning  
linnamööbliga Sari linnas Iraanis**

Citizens' Satisfaction with Green and Blue Spaces and Urban  
Furniture in Sari, Iran

Master's thesis

Curriculum in Landscape Architecture

Supervisor: Professor Simon Bell

2021



Eesti Maaülikool Kreutzwaldi 1, Tartu 51014		Magistritöö lõputöö lühikokkuvõte	
Autor: Neda Rezvanisanojouybari		Õppekava: Maastikuarhitektuur (439)	
Pealkiri: Kodanike rahulolu roheliste ja siniste ruumide ning linnamööbliga Sari linnas Iraanis			
Lehekülgi: 85	Jooniseid:43	Tabeleid:33	Lisasid:1
Osakond/Õppetool: Maastikuarhitektuur			
ETIS-e teadusvaldkond ja CERCS-i kood: Linna ja maa planeerimine T250			
Juhendaja(d): Simon Bell			
Kaitsmiskoht ja -aasta: Tartu, 2021			
<p>Linnad on elav ja dünaamiline organism, millel võib olla oluline roll inimeste psühholoogiliste ja vaimsete vajaduste rahuldamisel. Rohelised ja sinised alad, sealhulgas pargid, mängivad olulist rolli nende vajaduste rahuldamisel ja seetõttu peaksid need olema linnaplaneerimise ja kujundamise prioriteedid. Sari linnas olnud rohealade laiendamiseks mitu linna planeerimis- ja kujundamisprojekti. Need hõlmasid uute rohealade loomist, kus on värske välimööbel ning olnud oluline samm edasi hubase linnamaastiku loomisel Iraani põhjaosas. Selles uurimuses kasutati kvantitatiivseid ja kvalitatiivseid meetodeid, et uurida, kas Sari kodanikud on rahul linna rohe- ja siniruumide ning uue pargimööbliga. 120 Sari kodaniku küsitlustest selgus, et kodanikud olid üldiselt rahul. Samuti leiti, et lemmikpark oli Mellali park ja kõige vähem lemmik Azadegani park. Juurdepääsetavus, ohutus, disain, rajatised ja veekogud olid kõige olulisem põhjus parkide külastamiseks.</p>			
Märksõnad: Rahulolu, roheline, sinine, linnamööbel			



Estonian University of Life Sciences Kreutzwaldi 1, Tartu 51014		Abstract of master's thesis	
Author: Neda Rezvanisanijouybari		Curriculum: Landscape Architecture (439)	
Title: Citizen's satisfaction with green and blue spaces and urban furniture in Sari Iran			
Pages: 85	Figures:43	Tables:33	Appendixes:1
Department/Chair: Landscape architecture Field of research and (CERCS) code: Town and country planning T240 Supervisor(s): Simon Bell Place and date: Tartu, 2021			
The cities are a living and dynamic organism can play an essential role in meeting people's psychological and mental needs. The green and blue spaces, including parks, play an important role in meeting those needs, and therefore they should be prioritised in urban planning and designing. Sari city had several city designs and planning projects to expand the green spaces. These included adding more parks and open spaces with new urban furniture in the city and were an important step forward in creating a pleasant urban landscape in the north of Iran. This research used quantitatively and qualitatively methods to examine whether the citizen's of Sari were satisfied with green and blue spaces and new urban furniture in the city or not. From a questionnaire of 120 Sari citizens, it was found that the citizens were generally satisfied with the green and blue spaces and new urban furniture in Sari. It was also found that the favourite park was Mellal park, and the least favourite was Azadegan park. Accessibility, safety, design, facilities and water source were the most important reason to visit the parks.			
Keywords: Satisfaction, Green, Blue, Urban furniture			

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## *Acknowledgement*

*First and most, I would like to thank my thesis supervisor **Professor Simon Bell**. It was such an honour to have my thesis with one of the best landscape architects in the world. His great support was always with me when I ran into a trouble spot or had a question. Special thanks to dear **Joanna Tamar Storie** for helpful and unwavering guidance in writing.*

*I must express my very profound gratitude to **my parents**, my best friend and lovely sister **Parisa**, to my dear husband **Mahmoud** and the only treasure of my life my son **Arsam** for providing me with unfailing support and continuous encouragement throughout my years of study and through the process of researching and writing this thesis.*

*And I would like to give special thanks to my lovely brother **Nima** who has done the survey of this study; without his help, I couldn't do my research perfectly because of Covid situation.*

*Thanks all. This accomplishment would not have been possible without you.*

*Neda Rezvanisanijouybari*

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## **1.Introduction**

The city as a living and dynamic organism can play an essential role in meeting people's psychological and mental needs. Cities are made up of people, relationships, and activities. As green and blue spaces, including parks, affect people's mental and physical health, their role is important in urban planning, and good city design is a priority. The details within city spaces also have a crucial role to play. The urban furniture is a coordinating factor for users of the city environment and space, and so the suitability of the furniture installed in the city spaces and the quality of the design is also important to users.

Recently the Iranian government has paid more attention to the importance of these spaces and allocated more budget to create and design green and blue spaces and urban furniture in the city. This has been achieved by highlighting the visual factors in urban space and utilising urban furniture design in an effort to increase the quality of life. Sari city has also developed several city designs and planning projects by expanding green spaces, adding more parks and utilising open spaces. The city also added new urban furniture, which was a big step forward to creating a nice urban landscape in the north of Iran.

In this chapter, the thesis structure is explained, and the research aims and objectives introduced. The effects of urban green and blue spaces on citizens examined. Urban furniture and the visual factors of green and blue spaces that appear in cities both in a good and an undesirable way has not been addressed much in Iran, while these factors, intentionally or unintentionally, affect people.

This study investigates citizens' satisfaction with existing green and blue spaces and urban furniture in Sari. The results were then used to find out which factors people prefer in parks and facilities in the city that can be incorporated into plans and designs to improve the landscape of the city's green and blue spaces.

### **1.1.General purpose**

The study's general and primary aim is to understand citizens' satisfaction with the new urban furniture and green and blue spaces in Sari. The main goal of this research is to check the existing facilities and services from the people's point of view to find how much and in what way they are satisfied.

### **1.1.2. Practical purposes**

Improving the landscape design and making the places better in terms of quality and design is the practical aim of this research, as the urban spaces are essential for citizens' quality of life, health and well-being, accessibility in their form size, design, and plan. This research aims to contribute to ideas to improve the urban landscape for citizen in terms of quality, improvement of the existing conditions and social welfare.

## **1.2. Research questions**

### **1.2.1. The main question**

The main question of this research is, "Are citizens satisfied with the green and blue space and the new urban furniture?"

### **1.2.2. Sub-questions**

Research sub-questions are:

- 1- Are the citizens of Sari satisfied with the green and blue space in the city?
- 2- Are the citizens of Sari satisfied with the new urban furniture available in the city?

## **2.Literature review**

In this chapter, the literature related to the main theories of urban planning, design and urban landscape, the definition of a city, urban planning, urban furniture, urban spaces, and other related literature. The literature review and study background highlight that the quality of urban spaces affects citizens; urban green and blue spaces effectively improve the quality of citizens' lives, social behaviours and mental health and well-being. Therefore, the objective and subjective characteristics of urban green and blue spaces, urban furniture is essential. Therefore, the quality of these characteristics is directly related to the increased selection of activities leading to increased activity levels, greater social interactions, and improved social behaviour of citizens.

### **2.1.The list of research related to this research:**

- (Bahriny and Bell, 2021)in the study entitled "Traditional versus Modern? Perceptions and Preferences of Urban Park Users in Iran" Showed that people prefer modern parks over traditional parks for recreation, access, and culture - and offer more recreational facilities factors. There is a tendency for historical parks to be of interest to more educated people. It is possible to include more traditional elements such as water features in parks.
- (Asadpour and Dehkordi, 2020) A study entitled "Analysis of factors affecting the social life quality of citizens in contemporary urban spaces (Case study: Farhang Square of Yazd)" showed that factors such as a) Security and cleanliness, b Greenery, c) social events and interactions, d) physical and mental health, and e) happiness and life expectancy have the high significant impact on the quality of social life from the perspective of citizens.
- (Zhu *et al.*, 2020) a study entitled "Urban Park Vitality and Factors Affecting It from the Perspective of Amusement Services, Demand and Spatial Connections in China" showed that the presence of water density and facilities in parks has significant positive effects on park vitality. Higher external levels of mixed POI-based urban performance and density and developed public transportation were strongly associated with more extraordinary park vivacity. The park's life and the findings of this study have significant consequences in optimising urban parks' spatial configuration.
- (Ma *et al.*, 2019) a study on the "Effects of urban green space on the well-being of Beijing residents" showed that residents' higher participation in green space has their more increased well-being. Participation includes residents how many times visiting the

park or green space. Also, age, education, employment status, marital status, years of residence in Beijing, and average monthly income examined.

- (MOBARAKI and Pirkhezranyan, 2018) A study entitled "Assessment of Citizen Satisfaction Urban Furniture (Case Study: Marivan City)" showed that the average satisfaction with urban furniture is lower than the average score. The results show that the situation of furniture in this city has not been favourable. Access factor, attention to climatic conditions, attention to current standards has not been considered and constructed in a disordered and cluttered manner without regard to specific criteria and criteria. The design and construction of urban furniture have a low level compared to current standards.
- (Bahrini, Bell and Mokhtarzadeh, 2017) The study entitled "The relationship between the distribution and use patterns of parks and their spatial accessibility at the city level: a case study from Tehran, Iran" This study reviewed the distribution of green space and different types of parks in the whole city of Tehran and examined their accessibility, demographic characteristics, and current use. Moreover, found most of those needed more attention as they have poorly integrated into the city.
- (Mohammadi and Khanizadeh, 2017) in a study entitled "The study of the impact of urban spaces (green space and parks) on residential satisfaction (case study: Sahib al-Amr Park)" showed that according to studies, citizens are the most critical factor in using an urban space That is, they are dissatisfied with security, which is the most disappointed with this factor, and in terms of aesthetics, cultural and social dimension, welfare services and park equipment (urban furniture) and accessibility, the level of dissatisfaction reduced.
- (Zalki and Chibaei Aghagoli, 2017) a study entitled "The role of urban furniture in the satisfaction of citizens in Aligudarz" showed that Aligudarz urban furniture is not satisfied with the standards and does not pay attention to people with disabilities needs and climatic requirements designing and equipping urban furniture.
- (Allahdadi, 2017) a study entitled "Explaining the Criteria of Designing Urban Furniture and Landscape, with a Cultural-social Design Approach" showed the Important criteria for urban furniture design and landscape: the design's quality in terms of socio-cultural, safety and security, location, and welfare of users.
- (Alavi *et al.*, 2017) in a study entitled "Assessment Amount of satisfaction citizens of quantitative and qualitative green space With approach Sustainable Development" in

NazarAbad, they showed that quantitatively there is a shortage per capita and area of parks and green spaces. Qualitatively, citizens' satisfaction with security and facilities is inadequate, and in the welfare services of urban parks, citizens are satisfied with the current situation.

- (Rasouli, Derakhshandeh and Mirkazemi, 2016) A study entitled "Qualitative study of the development of urban parks and urban green space in optimising the use of citizens in the city of Sari" showed the importance of parks in Sari for people to have recreational activities and the cold weather reason for less use of parks.
- (Yousefzadeh, Parsaei and Afshar, 2014) A study entitled study of citizens' satisfaction with the quality of urban furniture (Case study: Zones 3 and 7 of Tehran Dist.1) showed that there are not many strengths in planning these urban elements in the region, For example, the lack or lack of quality in drinking water, toilets, benches, bus station shelters are among the cases mentioned by the citizens of the region and Citizens' satisfaction with the quality of urban furniture is at a low level and citizens are dissatisfied with the quality of furniture.
- (Hamberg *et al.*, 2008) A study entitled "The relationship between green space and mental well-being of adults" showed that quality assessment and narrative synthesis results show a significant relationship between different characteristics of green space and mental well-being (well-being, happiness, and satisfaction).

## **2.2.Theories of urban planning**

The theories from past to now show the thinkers, planners and designer always considered the people as a user and important part of the environment they found everything is in relation and have an impact on each other people on landscape and landscape on people.

### **2.2.1.Lewis Mumford**

He was one of the twentieth-century thinkers who turned to urban studies with Patrick Geddes's encouragement. The central axis of Mumford's theories is human. He believes that urban space should be organic in terms of both design and function. The design and function of space were a balanced personality that is related to nature and components of the environment. Society is the primary source of the architectural form and the living forms, the people, create a base for the living functional processes that support the society. In this way, he praises the cities of Greece and antiquity; the individual has participated in all spheres of society. The habit of face-to-face consultation and communication in the urban space strengthens the spirit of cooperation. "Mumford" carefully explores the nuclei of Greek civilisation, namely Olympia, Delphi, and



Cass, and shows its function in the direction of human health and psyche that praises the order, harmony, and beauty of the urban space and the unity that exists in space, function, and elements of the city that can slow down. To establish social relations, it considers it necessary to limit the population's size and density, and it is the proper distribution of the city's nuclei that pursues the functions of dispersion and, consequently, the city's multiplicity. He believes that scattering functions, if desired, make social and face-to-face relationships possible. "Mumford" refers to the history of cities and in each period criticises the role of the city in human development and relationships.(Sattarzadeh, Naghizadeh and Habib, 2010) (Mumford, 1937)

### 2.2.2.Amos Rapoport

Rapoport seeks to create environments in people's culture and consider the physical environment's differences due to cultural differences. The definition of space in different cultures depends on the presence or absence of specific elements. There are three categories of elements that organise space:

- 1- Elements whose shape is fixed or gradually changes, such as road, wall, or building.
- 2- Non-fixed elements such as signs, plants, and urban furniture.
- 3- Moving elements that include people, their activities, and relationships.

Rapoport introduces the urban space as a social environment that includes communications and considers urban space recognition possible by recognising its visual form and social importance. The communication that users make in space affects the importance of elements and spaces. He expresses two points about urban space, which leads to the creation of two different urban forms. One view considered buildings to be original for life and the rest of the spaces as connecting and wasted spaces, the second point of view gives buildings a private dimension and considers urban space necessary for social life. It divides urban space into territories whose purpose is to create boundaries between individuals' private and public actions, according to which the desired levels of reciprocity are the guarantee. He believes that the best way to experience a culture is to know the people's system of activities and lifestyles. (Rapoport, 2016) (Sattarzadeh, Naghizadeh and Habib, 2010)

### 2.2.3.Camillo Sitte

Sitte is one of the contemporary urban planners who think about artistic urban planning. He points to the value of art and beauty in the past's urban planning and believes modern cities' have lost their charm due to the presence of mechanical forms. People's lives have disappeared

from urban spaces, so an environment must be created physically and mentally for citizens' needs. In this way, "Citté" transforms the art of decoration into the art of space and believes that the city should have at least a few main squares and streets, which are enjoyable and bring a sense of pride to its inhabitants. (Omidy and Safari, 2005)

#### 2.2.4. Kevin A. Lynch

"Lynch" is a contemporary urban planner who has worked on the perceptual concepts of space and the mental imagery of its users. Lynch's goal is to make the city and urban spaces more readable and visible. He refers to people to understand the city's legibility and seeks to make it clear from their mental imaginations and intellectual backgrounds how a city becomes legible. Lynch believes that people's perceptions of the city are cross-sectional and do not leave a legible impression. Instead, urban spaces must have a sequence and continuity to keep in mind continuous and vivid scenes. An in-depth picture of the social role of the people. An image that gives a person a sense of security and increases human experiences' depth and intensity. Image perception is the result of two-way communication between the observer and the environment. The observer remembers the visual factors that are most important to him. He sets a limit on it and changes it according to his will. He believed that the city's appearance is based on five factors based on the city's physical factors: 1- Road, 2- Edge, 3- Range, 4- Node, 5- Sign. (Omidy and Safari, 2005)

#### 2.2.5. Manuel Castelles

He is a twentieth-century theorist who studies the city and urban spaces with a Marxist view. In his view, space is not a reflection of society. It is society itself. Space is the material dimension of society, and if we consider it independent of social relations, it is like separating nature and mind from its body. (Castelles, 1977)

Studying the theoretical foundations and backgrounds done inside and outside the country shows the importance of the city spaces; urban furniture has direct and significant effects on the urban landscape and the formation of citizens' social relations. The green and blue spaces are effective in improving the quality of life and social behaviours of citizens; the population have not been limited

### 2.3. Definition of City:

The concept of the city can be defined from different perspectives:

- From a historical point of view, the city has performed its duties and services in the past. Its performance has created salaries, benefits, and advantages for it and the facilities.

- A city can define as a permanent, dense, and relatively large settlement for socially heterogeneous people from a social perspective.
- From the statistical point of view, there should be a numerical difference between the village and the city. However, in different countries, different numbers are provided to define the city. This numerical difference in population shows that the city's concept varies according to the type of government, geographical location of the region, the standard of living, and economy. It is not possible to determine a fixed number for the urbanisation of the village.

In general, in the definitions of the city, one or more of the following criteria have been considered: population density, population size, social homogeneity, physical characteristics and appearance of the city, type of economic activities, social relations, division of labour, social control, social transformation, administrative institutions and organisations, social differences and stratification, urban facilities, lifestyle, behaviour, and morale of the people. Accordingly, the city has a higher population with a relatively high density that covers a large area, where non-agricultural occupations are predominant and socially heterogeneous. In that artificial environment, the human perspective prevails and focuses on administrative, political, and service activities. (Shokouei, 2014)

The other possible definition of a city would be by defining the city's boundaries through GIS analysis of the transportation system. (Burian, Vít and Langrová, 2014)

## **2.4.Urban planning:**

Urban planning incorporates a unique foresight for the city's future development using statistics and information on the city's economic, social, and physical aspects to analyse and minimise or reduce restrictions by providing a comprehensive and accurate plan with all the amenities necessary. (Rahnamaei and Shah hosseini, 2010)

Urban planning, due to its physical, social, and managerial dimensions, is necessarily multidimensional and multi-purpose. Urban planning can be considered a more comfortable, more accessible, enjoyable, and enjoyable environment for urban dwellers. Urban planning is: From a scientific and logical activity to achieve the goals of society. (Shia, 2008)

Planning for sustainable urban development must be long-term. Including all stakeholders should facilitate alliances among demographic groups that can support sustainable development's environmental values. (Naes, 2001)

## **2.5.Urban space:**

Urban space is a place that belongs to the general public, is not limited to the physical aspect, and is meaningful with the presence of man and his activity. Urban spaces have a long history in urban planning history and have been present in cities in different periods with different forms and have created an urban texture. (Bastier, Jean Bernaldere (authors) Ashrafi, 2008) Urban space is first and foremost a geographical space characterised by distances, areas, and densities. (Ali Akbari, 2005)

Urban space is an identifying element of a city so that its urban spaces form recognisable cities with unique characteristics. Urban spaces formed according to aesthetics give a beautiful appearance to the area under their influence can be considered critical elements of a city's development. Two momentous events have added to the urban space's importance for human life during the twentieth century. The first is the transformation of urbanisation into the dominant social life model, and the second is the transformation of cities into mostly artificial spaces. Understanding the relationship between spatial structures and social structures is one of the essential needs of urban life. (Ali Akbari, 2005) The building blocks of a place hidden in the four physical elements that form geometry. These elements include point, line, surface, and volume.(Hojjati and Moztarzadeh, 2010)

## **2.6.Urban furniture and its importance**

Cities, buildings, and in the meantime, streets have shaped the type of town and shaping building. This while is affecting the elements and the distance, and the number of users. (In addition to the heavy costs incurred for each). Urban space quality directly impacts all aspects of society (welfare, identity, recreation), and the urban space as a public place with superior quality will need every citizen. Urban furniture is essential as one of the crucial elements in the structure of the city. In that case, every citizen will need the city space as a public place with superior quality. The program's structure, hand-picked from artistic and engineering dimensions, is a memorable symbol for travellers. The importance of this issue stated in the following division:

- 1- The importance of the subject from the field of city identity
- 2- Impact on social and cultural behaviours
- 3- Improving the quality of services

## **2.7.Urban green and blue space**

The green space is designed and built within the city. This space is, in fact, a part of the structure or morphology of the city. In other words, the green space and the city's physical skeleton determine the body and the city's appearance in general.

The lands allocated to short vegetation (thin and small), such as grass and pastures as "green surfaces," and lands administered to long or relatively long foliage, such as forests, gardens, are all green spaces. In contrast to green space, surfaces free of trees and whose plants are limited to grass surfaces and types of cover plants define as a "negative space". In other words, "green surface" (Kashani Joo, 2010)"Urban green space is a part of open urban spaces that are natural or artificial areas, trees, shrubs, flowers, grasses, and other plants that based on human management, taking into account the rules, regulations, and specialities. Related to improving the living, habitat, and welfare conditions of citizens and non-rural population centres, are maintained, maintained, or built. (Rahnama, 2008) High-quality green and blue spaces can bring a healthy lifestyle and enjoyment for people. Design and construction are critical elements of urban planning for healthy communities and sustainable cities(Sohrabi, 2007)

Blue space in urban planning and design includes all the items dominated by surface water or water flow. Combined with green space (parks, gardens, etc., urban open space), it may help reduce heat-related risks from high temperatures in the city (urban heat island). (Gunawardena, Wells and Kershaw, 2017)

## **2.8.Classification of different types of green space**

According to this division, areas and surfaces related to the use of green space in cities are divided into three categories: a- public green space, b- semi-public, and c- street green spaces (Bahram Soltani, 2008). This classification is present in detail below.

### **2.3.1.1.Public green spaces:**

Urban green spaces that have social efficiency. These spaces use to spend leisure time, have fun and socialise with friends, and social and cultural gatherings and these green spaces are as parks referred to go.

### 2.3.1.2.Semi-public green spaces:

Green spaces have ecological efficiency, but their users are more limited than public spaces. Open areas of hospitals, barracks and government offices, etc., fall into this category.

### 2.3.1.3.Street green spaces:

They are a type of urban green space that typically forms a narrow margin between sidewalks and sidewalks or is concentrated in relatively small square spaces or on land around highways and streets. (Bahram Soltani, 2008)

### 2.3.2.Green space function (functions):

Green space quality is the foundation of urban ecosystem performance. Public parks and private gardens play a crucial role in supporting biodiversity and providing important urban areas' ecosystem services. Besides the importance of giving ecological assistance with air and water purification, wind and noise purifiers, or stabilisers for typical weather, natural areas also provide social and psychological aid in cities. These cases show the importance of creating and using urban green space. These spaces are essential in meeting urban residents' environmental needs and providing leisure spaces and a platform for communication and social interaction.

Here are the most critical functions of green spaces in cities:

- 1) Recreational function: Parks are the best place to relax and unwind. Today, the recreational parts of parks and green spaces have replaced some of the family's recreational functions, neighbourhood, and local relations, markets, etc.
- 2) Health function: Parks and green spaces can consider among the centres that provide people's health and mental health. The extensive role of green space in focusing on the nerves hide from someone.
- 3) Communication function: Parks are the basis of organised unwritten relationships formed and last according to different social strata' needs.
- 4) Educational function: Games and entertainment have an influential role in educating children's bodies and minds. Parks, although they have few playgrounds, provide the ground for children to acquire skills and creativity.
- 5) Buying and selling work: If parking is a place of tourism and tranquillity, there is a need for tourists due to the significant presence of people in a suitable and prosperous area for various other needs(Hojjati and Moztarzadeh, 2010)

## **2.9.Mental and physical well-being effects of urban green and blue spaces on citizens:**

The nature of human beings has an innate tendency towards nature. The human beings' need for plants and nature has been a biological and vital need from the beginning of creation. A need from Murray's point of view is a hypothetical structure whose occurrence thought to justify some objective and subjective facts (Rahnama, 2008). The existence of green spaces has a significant impact on life satisfaction, living conditions, health, happiness, and inner well-being, with an essential role of these spaces in improving the quality of life. Green spaces significantly impact the senses of smell, sight, hearing, touch, and taste. They have a strong relationship with humans and are extremely useful in belonging and understanding the environment. This emphasises that human beings need to have a close relationship with nature in designing urban parks. Various studies examining this theory have shown that if people spend a large part of their time in close contact with a good perspective, benefits will emerge in their social behaviour over several generations. The environment of natural attributes is the best relaxation for the human soul, for which there is no substitute. (Kamerva, 2007)

Creating green space changed the environment more than before; it makes better conditions for individual abilities development, achieves the necessary health for creativity and activity. And shows more individual and social construction; thus, creating cheerful, lively and creative green spaces will help (Rahnama, 2008). The light and colour of green space affect human spirits and psychological needs. How light is present in green space has a decisive role in how actions and reactions and knowing light in green spaces and how it affects people can lead to a conscious approach to human environmental design. Each colour affects the human psyche, which is related to his social and psychological behaviours. There is a three-axis relationship between colour, man, and nature that the more balanced this relationship is, the more psychologically beneficial it will be for a man. Wrong and inappropriate choice of colour causes it to look bad or become uncharacteristic, called the death of colour (Rahnama, 2008)

In green space, green is the predominant colour. This colour strengthens the spirit and self-confidence and the power to control events, so it is valuable and effective in calming the nerves and relieving fatigue. It also increases the power of endurance and patience, and through this, it can increase the city's atmosphere. Psychologically, it is more liveable for a large number of residents (Abdi Daneshpour, 2008). Conceptually, all water resources in the city are blue spaces .also parks with blue spaces are defined as recreational with water or water-based activity (Jin, N. P., Lee, S., Lee, 2015). Theme parks are a new form of recreational attraction that seeks to

create a "fantasy" space in time and space. These parks are an essential part of the tourism industry and hospitality and act as engines in the economy for the local communities they operate (Tasci and Milman, 2017) and citizens' mental health. There are different types of open spaces in a city that help meet the various needs of its residents. As part of a diverse and multi-purpose urban landscape, blue-green spaces have identified significant effects on health promotion. Due to the combination of health-promoting elements, the urban green and blue spaces show therapeutic landscapes for many city residents. Create and integrate a complete set of water spaces for cities, including local streams, pools, lakes and more, with good quality of life for its residents, is one of the challenges of the sensitive method of health planning. (Völker and Kistemann, 2015)

In general and by studying literature review, theoretical foundations and all urban elements and spaces with the human aspect of the study with objective and subjective features of urban green and blue spaces and urban furniture, especially urban parks, are directly related to increased activities, which will increase social activities and interactions and social behavior of citizens.



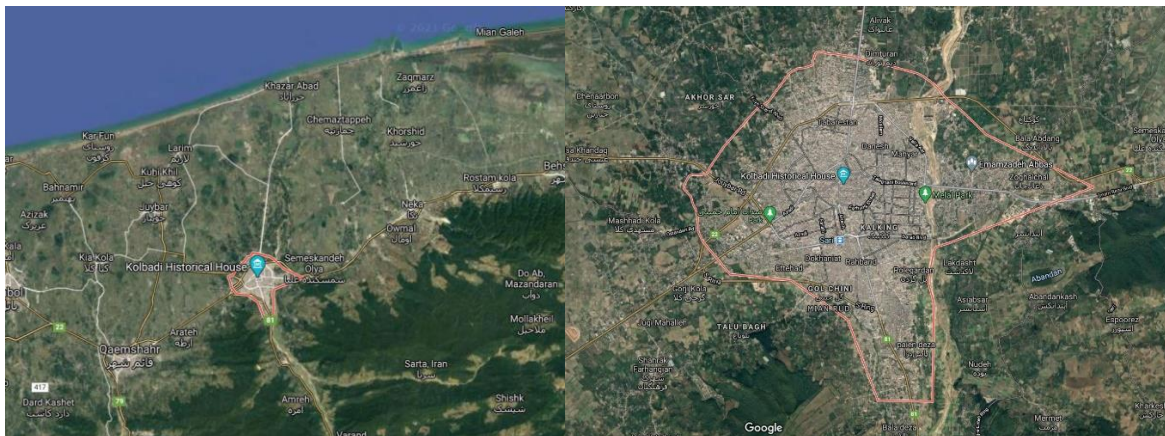
### 3. Research strategy and methods

#### 3.1. Introduction:

In this chapter, the general information about Sari city, such as its geographical location, natural features (climate and geology, heights and topography), water sources, and vegetation comes is discussed. This section also includes the human resources information on the city, the available statistical information regarding the demographic details of the society, the data collection tool (questionnaire), and the demographic details of the interviewees.

#### 3.2. Geographical location of Sari city

Sari is the capital of the Mazandaran province in northern Iran; it is also the largest city in the province. The people of Sari are called Saravi and was once the base of Agha Mohammad Khan shortly before the coronation of Qajar in Tehran. Sari is divided into three urban areas, and according to the 2011 census, its population was 296,417. Sari, located in the foothills of the Alborz mountain range, has two parts; a mountainous area and a plain area. It is located on the longitude of 53 degrees and 3 minutes and 36 seconds and latitude of 36 degrees, 33 minutes and 48 seconds. (N, 53° 3' 36" E, 48" 3' 36°) (Ahmadi, 2011)



*Figure 1: Sari city geographical location ([www.googlemap.com](http://www.googlemap.com))*

#### 3.3. Natural features (climate and topography)

##### 3.3.1. Climate

Iran is located on a high plateau between the latitude 25-40 degrees in the northern hemisphere. Generally, Iran is a warm region, but Sari's location on the south coast of the Caspian Sea means that it experiences a temperate and humid climate.

### **3.3.2.Geology of Sari**

In the northern part of Alborz mountain, there are several tectonic plates along with various fractures and displacements. In this quadrangle, Precambrian formations outcrop in the Amol quadrangle, for example. In this quadrangle, intrusive masses have a small outcrop, and in the southeast of the city, a quartz-diorite-quartz monzonite mass has a small protrusion; it is primarily hilly in the mountain part and flat near the sea. (Darvishzadeh, 2004)

### **3.3.3.Heights and topography**

Sari city consists of plains, foothills, and mountains areas. The plains have an almost temperate climate, whereas the mountainous region has colder weather than the other part. The Alborz mountain range is located at the southern tip of the city. Its height in this area is about 3,000 meters above sea level. These heights are covered in dense forests, and roads are limited and difficult to cross in the mountainous region. The highest peak is located in the south. (Chahardangeh section) (Mahjouri, 2010)

### **3.4.Water sources:**

Due to the natural condition and topography of the region, water resources in the city are as follows: 1.Groundwater resources: The plains part of the city comprises many layers of alluvial thickness and is a source of groundwater. The presence of permeable vegetation layers in the labia of other layers pressurises the water, and wherever these vegetation layers reach the surface naturally or deep drainage streams cut, it directs groundwater to the outside and forms springs. 2.Land surface water sources: Surface water resources in Sari city include large and small rivers originating from the Alborz mountain range. Important rivers that flow from the heights to the north and Sari city's plains are Tejen River, Lajim River, Zarmarud River, Garmab River, and Shirin River. These rivers play an important role in irrigating the agricultural lands of the city. In addition to rivers, one of the most traditional water storage methods is the dams which occur in most cities and villages and are fed by natural streams (Mazandarani, 2009).

### **3.5. Vegetation:**

This region has different herbaceous and forest plants in different forms of vegetation, depending on the location. Tree species of this region include oak and hornbeam, linden, evangelical, alder, boxwood, mulberry (which is not in the condition of extinction), sparrow tongue, lilac, walnut, maple, beech, chestnut, elm, Oja, lime, sagebrush, Daghdaghan, Shirdaroo. The beech community is the most vigorous forest tree among the Caspian forest communities and forms the most beautiful and wealthiest forests in Iran. (Mahjouri, 2010)

### **3.5.Human and demographic characteristics of Sari**

#### **3.5.1.Political divisions:**

According to the latest political divisions, Sari city has five districts, 14 rural areas, three towns, and 424 villages. Five regions are consisting of the Central region, Gulijan Rustaq, Miandorud, Chahardange, Dodange.

#### **3.5.2.Population size and growth rate**

The population of Sari city in 2016 was 504,298 people, of which 309,820 people lived in Sari city. The relative share of this city's population as a percentage of the total population of Mazandaran province in the year in question was about 16.8%. The size of this ratio in the years 1976, 1986, 1996, 2006 were 10.7%, 10.6%, 10.8% and 16.2%, respectively. Thus, it can be observed that there has been an acceleration of population growth in this city, which is slightly higher than the whole of Mazandaran province.

#### **3.5.3.Layout of the city**

Sari's historical physical structure is based on the intersection of two perpendicular communication axes that connect the city centre and its gates. At the intersection of these axes, which corresponded to the city's geometric centre, the city's main fixed elements, such as the Grand Mosque, Bazar, etc., were concentrated. With the city market's development and growth to the north and Yahya Shrine, the city expands in this direction, and Yahya Shrine is inside the town. Old neighbourhoods form along the main passages that all pass through the city centre. At the intersection, the principal place of movement of residents and urban life, there was an open space in the neighbourhood centre. The main elements of this central neighbourhood were a mosque, bath, Hosseinieh, water storage, etc. The most important principle governing cities and the neighbourhoods' development has been maintaining the continuity and connection of neighbourhood centres, city centres, and communities through the main orders. However, the ancient fabric has been worn out by time and created a historical disconnect between the city's intellectual and value foundations, but the remains can still be seen and visible in the city's texture.

### **3.6.Statistical society**

The details of all citizens who are more than 18 years old, the officials Islamic Council of Sari, and experts related to this issue are available to the nearest 100,000 people. The main part of the interviews and questionnaire filled in Sari's primarily green and blue spaces and the city's trade centre, which was the most populated.

### 3.7.Data collection tools (Questionnaire)

A questionnaire was constructed that took into account the context applicable to Sari. It was divided into two parts. The first part was related to the respondents' demographic data, including gender, education, occupation, age, marital status and disabilities. The second part included 20 questions in a range of 5 Likert-type options on a descriptive rating scale for each option of lowest to the highest score from 1 to 5. Also, four additional qualitative questions were included giving the general overview of respondents about the green and blue and urban furniture and which parks are the most and least favourite park for them. After each question, people could leave a comment. Data were collected in two ways; an online interview and interviews conducted in the city's parks and most crowded places. The interviews were carried out with Sari citizens 18 years old or above. The survey was carried out over two months because the COVID-19 people preferred to answer questions orally, and it took a long time; also, finding people to stay and read carefully and fill the questionnaire was not easy. After two months of online and field surveys, 120 people had filled out the questionnaire. The reliability of the questionnaire has checked using Alpha Cronbach in SPSS-22 on the first 50 questionnaires. The numerical data in SPSS-22 and Excel software quantitatively analysed to do inferential statistics, see the correlation and association are there the tests and analysis such as the correlation between items tested with Kendal tau b have done. Moreover, the general questions and comments were analysed qualitatively.

### 3.8.Method of data analysis

### 3.9.Research characteristic data frequency

In this first part, frequency tables show the data to describe the demographic variables and the answers to the questionnaire questions.

#### 3.9.1.Gender of the respondents

**Table 1:**Frequency and percentage distribution of respondents by "gender."

Gender	Number	Percentage
Male	54	45.0
Female	66	55.0
Total	120	100.0

According to table (1), out of 120 respondents, 54 % (45.0) are male, and 66 % (55.0) are female.

### 3.9.2.Occupation

**Table 2 :***Frequency distribution of respondents by "occupation."*

Occupation	number	percentage
employed	31	28.8
unemployed	39	32.5
homemaker	20	16.7
retired	15	12.5
student	15	12.5
Total	120	100

According to the data in Table 4-2, out of a total of 120 people, most of the respondents in the occupational group have been 39 (32.5%) self-employed, 31 (28.8%) employed, 20 (16.7%) Homemaker, 15 (12.5%) are students, and 15 (12.5%) are retired.

### 3.9.3.Marital status

**Table 3 :***Distribution Frequency distribution of respondents by "marriage."*

Marriage	number	percentage
single	35	29.2
married	84	70.0
unanswered	1	0.8
Total	120	100

According to the data in Table 4-4 out of 120 people, 84 people equal (70.0%) are married, and 35 of the respondents equivalent (29.2%) are single.

### 3.9.4.Age group

**Table 4:** Frequency distribution of respondents by "age."

Age group	number	percentage
18-29	24	20.0
30-39	35	29.2
40-49	29	24.2
50-59	21	17.5
60-69	6	5.0
+70	5	4.2
Total	120	100

According to the data in Table 4, 120 people, most respondents age group were in the age range 30 to 39 years (29.2%), 24 people 18 to 29 years (20.0%), and 29 people 40 to 49 years (24.2%) and 21 respondents 50 to 59 years (17.5%) and six people are 60 to 69 years (5.0%) and five people in the age group over 70 years (4.2%).

### 3.9.5.Education

**Table 5:** Distribution Frequency distribution of respondents by "education."

Education	Number	Percentage
elementary	6	5.0
high school	16	13.3
diploma	30	25.0
Higher education	68	56.7
Total	120	100

According to the data in Table 4-6 out of 120 people, most respondents have 68 (56.7%) with higher education, and the number of respondents, 30 (25.0%), had diplomas. The number of

respondents, 16 (13.3%), have high school degrees, and the number of respondents, six (5.0%), have an elementary degree.

### 3.9.6.Disability

**Table 6:** *Distribution Frequency distribution of respondents by "disability."*

Disability	number	percentage
yes	4	3.3
no	116	96.7
total	120	100

According to the data in Table 6, out of 120 people (3.3%), people reported disabilities.

## 4.Results

### 4.1.Introduction:

In this chapter, data analysis and tests results have done quantitatively and qualitatively, and the result of the analysis show the data output and the founding. First of all, the mean and standard deviation of demographic data show satisfaction for different items of green and blue spaces, and new urban furniture items show after that. All items in green and blue spaces and urban furniture items tested by Chi-Square test and those meaningful items by significant relation with demographic data show in this chapter. Furthermore, after that, the qualitative questions outcomes will show assessments of comments and the questions people left in the questionnaire and interview.

### 4.2.Reliability of questionnaire

The reliability of the questionnaire checked by 50 questionnaires with Cronbach's Alpha test, and when it was high validity, the survey continued. The tables below show the test results.

**Table 7:** *Validity and reliability of the whole questionnaire of green and blue space and urban furniture*

Reliability Statistics	
Cronbach's Alpha	N of Items
.898	20

**Table 8:** *Assessing the validity and reliability of the items of the Green and Blue Space and Urban Furniture Questionnaire*

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1.well-planned	60.05	139.779	.555	.892
2.well-designed	59.98	139.059	.636	.890
3.Importance of trees	58.89	147.257	.299	.899
4.Flower arrangements	58.85	147.658	.291	.899
5.Number of trees	59.71	140.158	.530	.893
6.Type, form, and location of trees	59.76	139.580	.630	.890



7.Sufficient lighting in green and blue	59.93	137.347	.636	.890
8.Enough green and blue spaces	60.19	137.333	.654	.889
9.Enough facilities	60.31	137.207	.649	.889
10.Suitable for people with disabilities	60.58	142.817	.400	.897
1.bus stop shelters	60.14	141.820	.534	.893
2.number of trash bins and regular clean	59.74	140.781	.538	.893
3.Kiosks are necessary	59.82	150.117	.126	.905
4.enough benches in the street	59.99	139.269	.586	.891
5.enough benches in green and blue	59.92	140.296	.567	.892
6.quality and design of the benches	59.96	138.360	.637	.890
7.Pavement quality and design	60.18	139.372	.615	.890
8.enough children's playgrounds	60.10	139.082	.560	.892
9.enough outdoor exercise equipment in parks	60.14	138.375	.619	.890
10.Suitable for people with disabilities	60.83	143.322	.453	.895

Cronbach's alpha statistic evaluated the reliability of the measurement tool. Therefore, the questionnaires distribute among a sample of 50 people, and then Cronbach's alpha value calculate base on it. According to the table above, all the alpha statistics values are high in the variables of urban furniture, green and blue space. Therefore, it can conclude that the present questionnaires have high validity.

### 4.3.Descriptive analysis

#### 4.3.1.Mean and standard deviation of demographic data

**Table 9:** Mean and standard deviation of demographic data

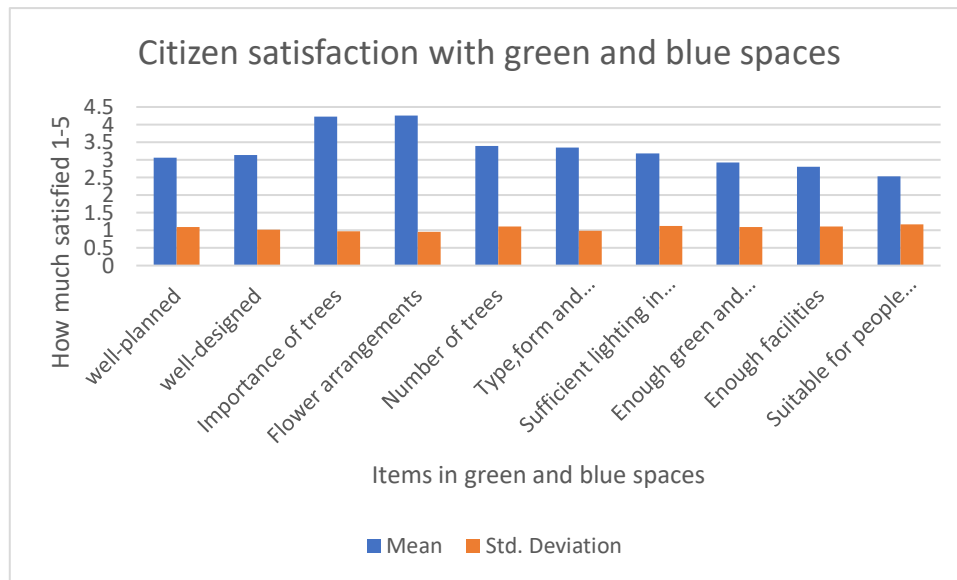
Descriptive Statistics				
	N	Mean		Std. Deviation
Demographic data	Statistic	Statistic	Std. Error	Statistic
Gender	120	1.55	.046	.500
Occupation	120	2.53	.122	1.334
Marital Status	120	1.72	.043	.471
Age group	120	2.71	.121	1.331
Education	120	3.33	.081	.892
Disability	120	1.97	.016	.180

The characterisation table (8) shows the respondent's gender female are more participated; unemployed people were the more significant respondents with this occupation. Also, a considerable number have been married with the age group 30-39 and higher education. Of all respondents, only 3.3 had a disability.

#### 4.3.2. Descriptive analysis of green and blue spaces data

**Table 10:** Citizen satisfaction with green and blue spaces data

Citizen satisfaction with Green and Blue spaces						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
well-planned	120	1	5	3.06	1.095	1.198
well-designed	120	1	5	3.13	1.017	1.035
Importance of trees	120	1	5	4.22	.980	.961
Flower arrangements	120	2	5	4.26	.957	.916
Number of trees	120	1	5	3.40	1.111	1.234
Type, form, and location of trees	120	1	5	3.35	.993	.986
Sufficient lighting in green and blue	120	1	5	3.18	1.123	1.260
Enough green and blue spaces	120	1	5	2.92	1.097	1.203
Enough facilities	120	1	5	2.80	1.112	1.237
Suitable for people with disabilities	120	1	5	2.53	1.166	1.361
Valid N (listwise)	120					



**Figure 2:** Citizen satisfaction with green and blue spaces

In table 10, the mean and standard deviation show, the green and blue spaces are averagely well-planned (3.06), and the general satisfaction is in the middle. The average feedback for the well-designed green and blue spaces (3.13) is slightly more than the well-plan, but it can also say it is average. The importance of the trees (4.22) had significant positive answers with (0.957) standard deviations, which show people believe and agreeing that trees are essential for the city, and by the question about the number of trees in the city answers (3.40), it can conclude that people are averagely satisfied, but they prefer to have more number of trees in green and blue spaces and the city. The most significant positive attitude was Sari's flower arrangement, which means the city plan and design have a good and positive function in arranging and designing the city and spaces by flowers. The satisfaction about type, form, and location of trees was in median average, showing some people agree with the tree's shape and location, and some do not agree with the existing trees features. Sufficient lighting in the green and blue spaces also agreed and disagreed with a normal slip to the favourable agreement by 3.18. the data mean and standard deviation shows enough green and blue spaces (2.92), and the facilities in these spaces (2.80) are less than average, which means people need more green and blue spaces in the city, and they agreed that these existing spaces in the city need more facilities to be a better place to use.

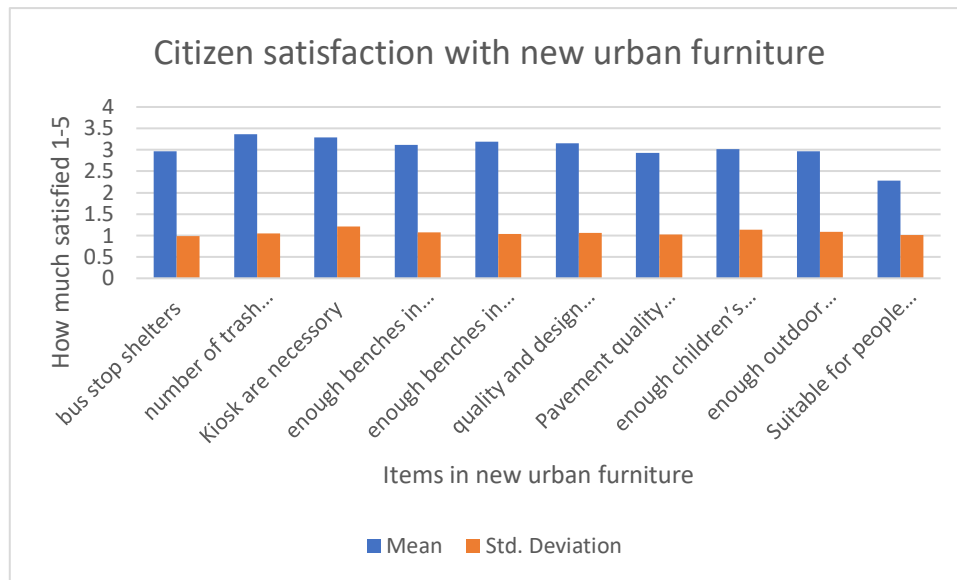
Furthermore, the most significant low agreement was about the suitability of these green and blue spaces for people with disabilities. It shows plan and design of green and blue spaces need more consideration to people with disabilities. The data show, agreement about green and blue

spaces, is in the expected average, and there is no significant negative attitude to the green and blue status.

#### 4.3.3.Descriptive analysis of urban furniture data

**Table 11:** Descriptive analysis of urban furniture data

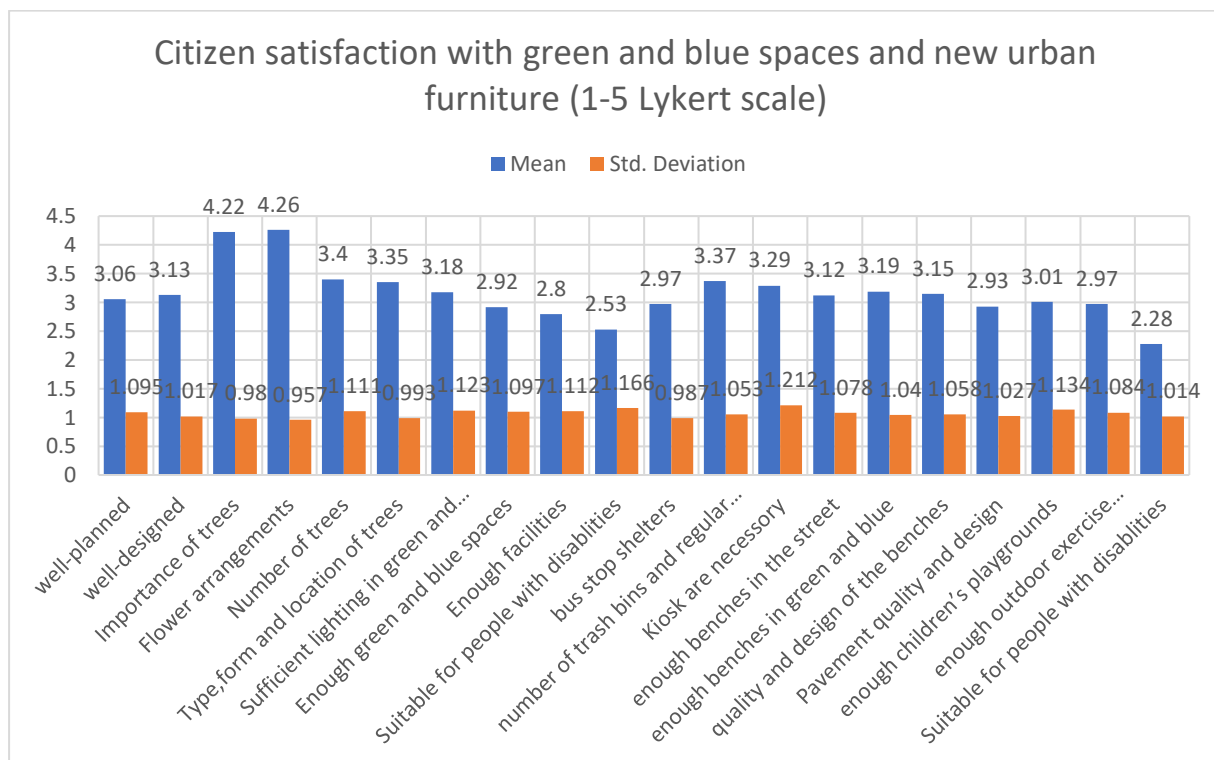
<b>Citizen satisfaction with new urban furniture</b>						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
bus stop shelters	120	1	5	2.97	.987	.974
number of trash bins and regular clean	120	1	5	3.37	1.053	1.108
Kiosk are necessary	120	1	5	3.29	1.212	1.469
enough benches in the street	120	1	5	3.12	1.078	1.163
enough benches in green and blue	120	1	5	3.19	1.040	1.081
quality and design of the benches	120	1	5	3.15	1.058	1.120
Pavement quality and design	120	1	5	2.93	1.027	1.054
enough children's playgrounds	120	1	5	3.01	1.134	1.286
enough outdoor exercise equipment in parks	120	1	5	2.97	1.084	1.175
Suitable for people with disabilities	120	1	5	2.28	1.014	1.028
Valid N (listwise)	120					



**Figure 3:** Citizen satisfaction with new urban furniture bar chart figure

The descriptive analysis table 11 about citizens' satisfaction with new urban furniture shows that people (0.03) under average satisfied with the bus stop shelters. The higher significance of urban furniture is the number of trash bins and regular cleaning of them with 3.37. people also agreed on the necessity of kiosks in the city which had also disagreed but less than average. The number of benches in the streets, green and blue spaces agreement was more than average, with 3.12 and 3.19. The benches' quality and design had some people who agreed with the current situation and some people who have been disagreed, but the agreed citizen was more. The pavement quality and design were slightly less than average, which means the pavement could improve quality and design. The attitude about the sufficient number of playgrounds almost on average shows people who agreed and disagreed with the status are almost the same number. The outdoor exercise equipment was 0.03 less than average, which means the parks need more exercise equipment and citizen's satisfaction less than the middle. Moreover, the lowest satisfaction level was about the suitability of urban furniture for people with disabilities. It shows the urban furniture quality and design need more consideration to these people.

As the data in the above table shows, the citizen's satisfaction, in general, is in the middle of average, and there is no significant high or low data about urban furniture. Data are almost average. The city's current situation about urban furniture has some agree and disagreed attitude in some part the number under average show city planners and designers need to consider more aspect to increase the citizen's satisfaction.



**Figure 4:** Citizen satisfaction with green and blue spaces and new urban furniture

Figure 4 shows have been standing out above average preference or satisfaction level is the importance of the trees (4.22) and flower arrangement (4.26) with a narrow standard deviation that trees are assessing of the city the number of trees could be more, other things are generally a kind of on average. However, the people who feel are enough green, and blue spaces suitable for disabled people are lower than average. For the new urban furniture, most of the items are average, item of the number of trash bins and regular cleaning (3.37) with a higher level of satisfaction, less than average like suitability of urban furniture for disabled people with (2.28) with a lower level of satisfaction, it is not huge but below average. However, it shows people are not satisfied with the current status for disabled people; moreover, the suitability of green and blue spaces for people with disabilities below an average too.

#### 4.4. Inferential statistics

In the inferential section, to determine the significance of statistical differences between the opinions, Chi-square and Kendal tau b in SPSS-22 software used. In this part, the variables item tested and examined to find the correlation and relation between the items, all demographic data examined in the Chi-square test to determine which items have meaningful relationships.

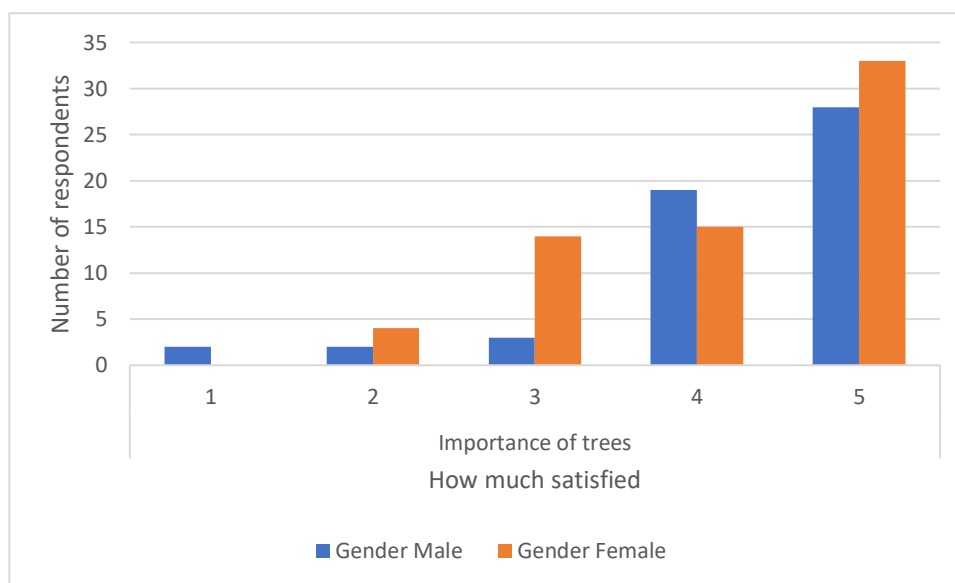
## 4.5. Assessment of demographic variables with green and blue space questionnaire items

All variables items in the questionnaire checked with the demographic data, and those that had meaning came in this part. The meaningful result came from gender and importance of trees, marriage with a number of trees, marital status with the suitability of green and blue spaces for people with disabilities, and education with well-designed items, gender and enough benches in the streets and also gender and quality and design of the benches. Each crosstab table has done the Chi-square test, and those with had significant relation less than 0.05 are below.

### 4.5.1. Gender relation in the level of satisfaction with green and blue spaces importance of trees item

**Table 12:** Crosstab gender and item of importance of trees

Crosstab				
Count				
		Gender		Total
		Male	Female	
Importance of trees	1	2 (1.67%)	0	2 (1.67%)
	2	2 (1.67%)	4 (3.33%)	6 (5%)
	3	3 (2.5%)	14 (11.67%)	17 (14.17%)
	4	19 (15.83%)	15 (12.5%)	34 (28.33%)
	5	28 (23.33%)	33 (27.5%)	61 (50.83%)
Total		54 (45%)	66 (55%)	120 (100%)



**Figure 5:** Genders relation with the importance of trees item

**Table 13:** Chi-Square table of two genders and research green and blue space

Chi-Square Tests			
	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	9.560 <sup>a</sup>	4	.049
Likelihood Ratio	10.855	4	.028
Linear-by-Linear Association	.382	1	.537
N of Valid Cases	120		

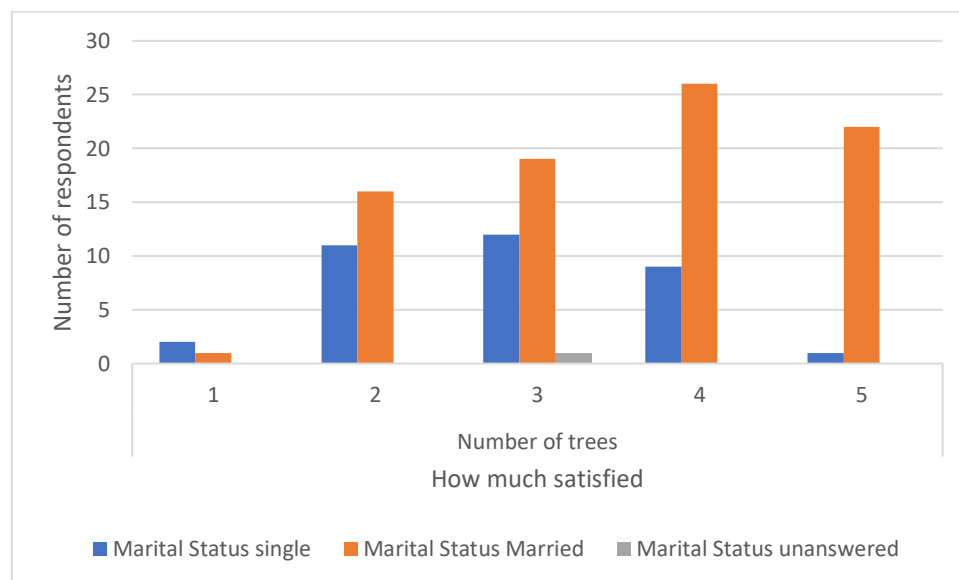
As shown in table 12 and 13, among the ten items of the green and blue space questionnaire, there is a significant relationship between gender and trees along boulevards and streets is essential as part of urban green space, by averagely more with the female. The calculated significance level ( $P < 0.000$ ) is less than 0.05 by the Chi-Square test.



#### 4.5.2.Marriage relation in the level of satisfaction with green and blue space number of trees item

**Table 14:** Crosstab table of marital status and number of trees

Crosstab					
Count					
		Marital Status			Total
		single	Married	unanswered	
Number of trees	1	2 (1.67%)	1 (0.83%)	0	3 (2.5%)
	2	11 (9.17%)	16 (13.33%)	0	27 (22.5%)
	3	12 (10%)	19 (15.84%)	1 (0.83%)	32 (26.67%)
	4	9 (7.5%)	26 (21.67%)	0	35 (29.17%)
	5	1 (0.83%)	22 (18.33%)	0	23 (19.16%)
Total		35 (29.17%)	84 (70%)	1 (0.83%)	120 (100%)



**Figure 6:** Marital status relation with the number of trees item

**Table 15:** Table 4-15: Chi table of genders and number of trees

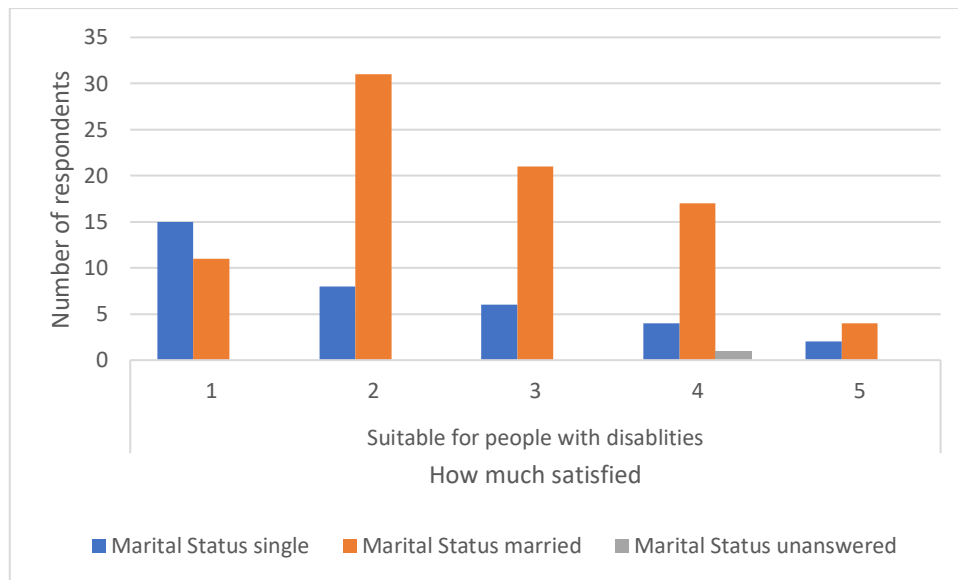
Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.990 <sup>a</sup>	8	.059
Likelihood Ratio	17.018	8	.030
Linear-by-Linear Association	9.523	1	.002
N of Valid Cases	120		

As shown in tables 14 and 15, among the ten green and blue space questionnaire questions, there is a significant relationship between marriage and item number five (there are enough trees in the city). The calculated significance level ( $P < 0.000$ ) is less than 0.05 by the Chi-Square test, on average more relationships with married people.

4.5.3. Marital status relation in the level of satisfaction with green and blue space suitability for people with disabilities item

**Table 16:** Crosstab table of marital status and green and blue spaces suitability for people with disabilities

Crosstab					
Count					
		Marital Status			Total
		single	married	unanswered	
Suitable for people with disabilities	1	15 (12.5%)	11 (9.17%)	0	26 (21.67%)
	2	8 (6.67%)	31 (25.83%)	0	39 (32.5%)
	3	6 (5%)	21 (17.5%)	0	27 (22.5%)
	4	4 (3.33%)	17 (14.17%)	1 (0.83%)	22 (18.33%)
	5	2 (1.67%)	4 (3.33%)	0	6 (5%)
Total		35 (29.17%)	84 (70%)	1 (0.83%)	120 (100%)



**Figure 7:** Marital status relation with the item of the suitability of green and blue spaces for disabled people

**Table 17:** Chi-Square table of marital status and green and blue spaces suitability for people with disabilities

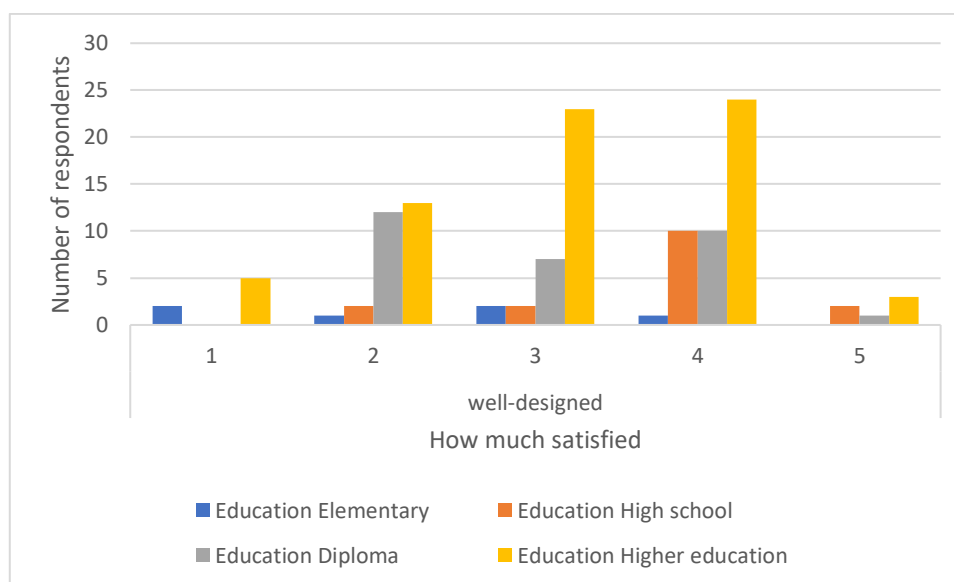
Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	17.861 <sup>a</sup>	8	.022
Likelihood Ratio	15.913	8	.044
Linear-by-Linear Association	6.147	1	.013
N of Valid Cases	120		

Tables 16 and 17 show another item related to marital status: green and blue spaces are suitable for people with disabilities. The Crosstab table and Chi-Square test show the relationship by significance less than 0.05. This relation is more with people who are married.

#### 4.5.4. Level of education relation in the level of satisfaction with green and blue space well-designed item

**Table 18:** Crosstab table of education and green and blue spaces well-designed status

Crosstab						
Count						
		Education				Total
		Elementary	High school	Diploma	Higher education	
well-designed	1	2 (1.67%)	0	0	5 (4.17%)	7 (5.84%)
	2	1 (0.83%)	2 (1.67%)	12 (10%)	13 (10.83%)	28 (23.33%)
	3	2 (1.67%)	2 (1.67%)	7 (5.83%)	23 (19.17%)	34 (28.33%)
	4	1 (0.83%)	10 (8.33%)	10 (8.33%)	24 (20%)	45 (37.5%)
	5	0	2 (1.67%)	1 (0.83%)	3 (2.5%)	6 (5%)
Total		6 (5%)	16 (13.33%)	30 (25%)	68 (56.67%)	120 (100%)
Percentage		5	13.33	25	56.67	100



**Figure 8:** Education relation with the well-designed item

**Table 19:** Crosstab table of education and green and blue spaces well-designed status

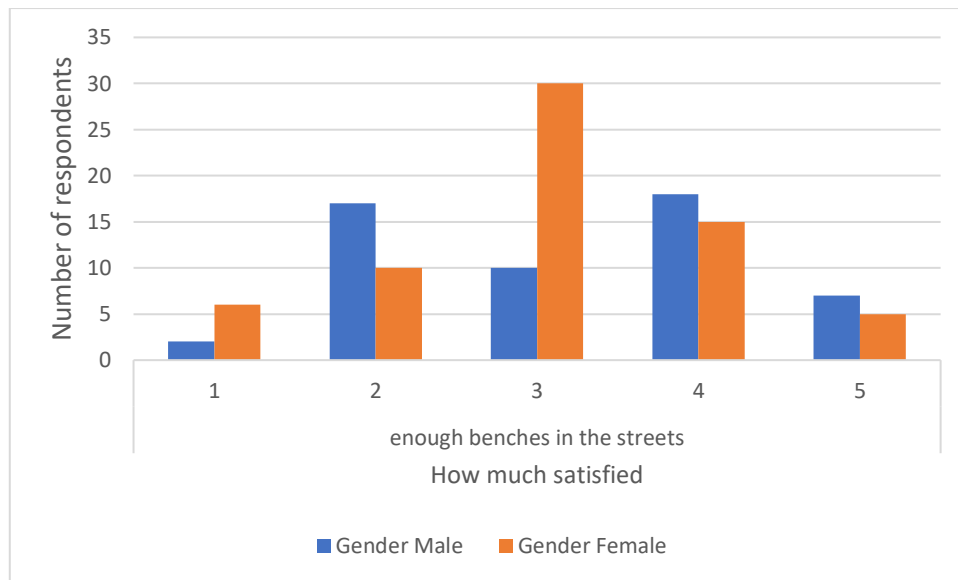
Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	24.098 <sup>a</sup>	12	.020
Likelihood Ratio	22.111	12	.036
Linear-by-Linear Association	.041	1	.840
N of Valid Cases	120		

As shown in tables 18 and 19, among the Green and Blue Space Questionnaire's ten items, there is a significant relationship between education and item about green and blue spaces well-designed. The calculated significance level ( $P < 0.000$ ) is less than 0.05 after the Chi-Square test. Moreover, there is a high relationship between people with higher education and good relations with diplomas.

4.5.5. Gender relation in the level of satisfaction with new urban furniture enough benches in the streets item

**Table 20:** Crosstab table of gender and enough benches in the streets

Crosstab				
Count				
		Gender		Total
		Male	Female	
Enough benches in the streets	1	2 (1.67%)	6 (5%)	8 (6.67%)
	2	17 (14.17%)	10 (8.33%)	27 (22.5%)
	3	10 (8.33%)	30 (25%)	40 (33.33%)
	4	18 (15%)	15 (12.5%)	33 (27.5%)
	5	7 (5.83%)	5 (4.17%)	12 (10%)
Total		54 (45%)	66 (55%)	120 (100%)



**Figure 9:** *Genders relation with the item about enough benches in the streets*

**Table 21:** *Chi-Square table of gender and enough benches in the streets*

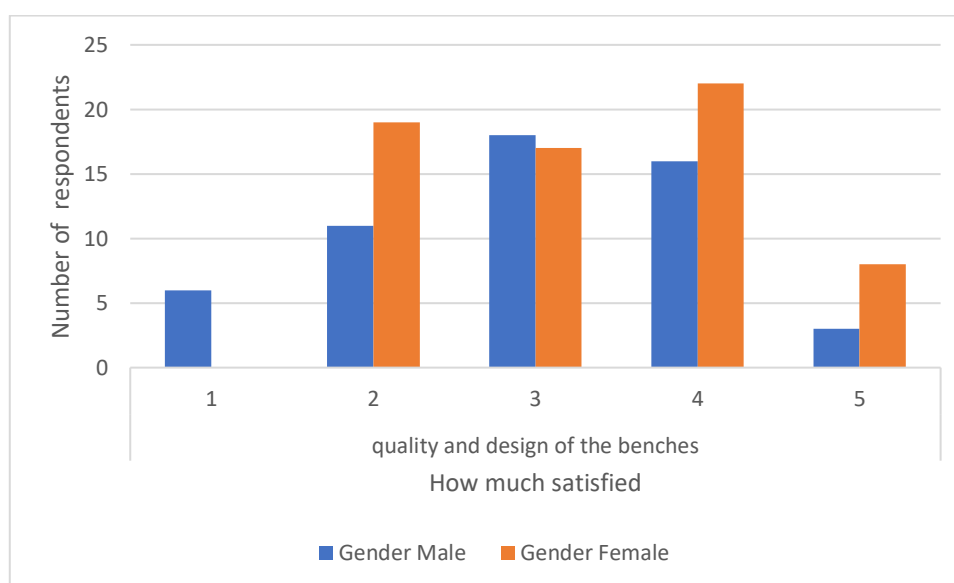
Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.354 <sup>a</sup>	4	.010
Likelihood Ratio	13.800	4	.008
Linear-by-Linear Association	.640	1	.424
N of Valid Cases	120		

As shown in tables 20 and 21, there is a significant relationship between gender and item number 4 (there are enough benches in the streets) among the urban furniture questionnaire's ten items. The calculated significance level ( $P < 0.000$ ) is less than 0.05 in the Chi-Square test table. Furthermore, it is more with females among two genders.

#### 4.5.6. Gender relation in the level of satisfaction with new urban furniture benches quality and design item

**Table 22:** Crosstab table of gender and quality and design of benches

Crosstab				
Count				
		Gender		Total
		Male	Female	
quality and design of the benches	1	6 (5%)	0	6 (5%)
	2	11 (9.17%)	19 (15.83%)	30 (25%)
	3	18 (15%)	17 (14.17%)	35 (29.17%)
	4	16 (13.33%)	22 (18.33%)	38 (31.66%)
	5	3 (2.5%)	8 (6.67%)	11 (9.17%)
Total		54 (45%)	66 (55%)	120 (100%)



**Figure 10:** Genders relation with the item about quality and design of the benches

**Table 23:** Chi-Square test table of gender and quality and design of benches

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.285 <sup>a</sup>	4	.036
Likelihood Ratio	12.613	4	.013
Linear-by-Linear Association	2.489	1	.115
N of Valid Cases	120		

As shown in tables 22 and 23, out of 10 items of the urban furniture questionnaire, there is a significant relationship between gender and item number 6 (the benches' quality and design are good and comfortable). The calculated significance level ( $P < 0.000$ ) is less than 0.05. Moreover, it was more with females the level of satisfaction compared to the male gender.

#### 4.6. Kendall's tau b correlation test of green and blue spaces items

To check the correlation of the questionnaire items, Kendall tau b use which in table 24 results from this test for green and blue spaces item comes.

**Table 24:** Kendall tau b correlation test, green and blue spaces research questions

Correlations											
		well-planned	well-designed	Importance of trees	Flower arrangements	Number of trees	Type, form and location of trees	Sufficient lighting in green and blue	Enough green and blue spaces	Enough facilities	Suitable for people with disabilities
well-planned	Correlation Coefficient	1.000	.700**	.366**	.355**	.240**	.410*	.448**	.217**	.384**	.038
	Sig. (2-tailed)	.	.000	.000	.000	.002	.000	.000	.005	.000	.621
	Order of correlation high 1 to low 10		1	5	6	7	3	2	8	4	-



well-designed	Correlation Coefficient	.700**	1.000	.307**	.324**	.311**	.433*	.520**	.326**	.421**	.102
	Sig. (2-tailed)	.000	.	.000	.000	.000	.000	.000	.000	.000	.182
	Order of correlation high 1 to low 10	1		8	6	7	3	2	5	4	-
Importance of trees	Correlation Coefficient	.366**	.307**	1.000	.552**	.118	.178*	.216**	.064	.104	-.026
	Sig. (2-tailed)	.000	.000	.	.000	.133	.024	.006	.414	.185	.738
	Order of correlation high 1 to low 10	2	3		1	-	5	4	-	-	-
Flower arrangements	Correlation Coefficient	.355**	.324**	.552**	1.000	.203**	.232*	.231**	.065	.188*	-.100
	Sig. (2-tailed)	.000	.000	.000	.	.010	.003	.003	.413	.017	.202
	Order of correlation high 1 to low 10	2	3	1		6	4	5	-	7	-
Number of trees	Correlation Coefficient	.240**	.311**	.118	.203**	1.000	.411*	.295**	.419**	.389**	.296**
	Sig. (2-tailed)	.002	.000	.133	.010	.	.000	.000	.000	.000	.000
	Order of correlation high 1 to low 10	7	4	-	8		2	6	1	3	5
Type, form and location of trees	Correlation Coefficient	.410**	.433**	.178*	.232**	.411**	1.000	.544**	.465**	.324**	.251**
	Sig. (2-tailed)	.000	.000	.024	.003	.000	.	.000	.000	.000	.001
	Order of correlation high 1 to low 10	5	3	9	8	4		1	2	6	7
Sufficient lighting in green and blue	Correlation Coefficient	.448**	.520**	.216**	.231**	.295**	.544*	1.000	.368**	.445**	.204**
	Sig. (2-tailed)	.000	.000	.006	.003	.000	.000	.	.000	.000	.007
	Order of correlation high 1 to low 10	3	2	8	7	6	1		50	4	9
Enough green and blue spaces	Correlation Coefficient	.217**	.326**	.064	.065	.419**	.465*	.368**	1.000	.485**	.389**
	Sig. (2-tailed)	.005	.000	.414	.413	.000	.000	.000	.	.000	.000
	Order of correlation high 1 to low 10	7	6	-	-	3	2	5		1	4
Enough facilities	Correlation Coefficient	.384**	.421**	.104	.188*	.389**	.324*	.445**	.485**	1.000	.241**
	Sig. (2-tailed)	.000	.000	.185	.017	.000	.000	.000	.000	.	.001
	Order of correlation high 1 to low 10	5	3	-	8	4	6	2	1		7
Suitable for	Correlation Coefficient	.038	.102	-.026	-.100	.296**	.251*	.204**	.389**	.241**	1.000

people with disabilities	Sig. (2-tailed)	.621	.182	.738	.202	.000	.001	.007	.000	.001	.
	Order of correlation high 1 to low 10	-	-	-	-	2	3	5	1	4	

Table 24; tables' correlation coefficient and significance show between the items by Kendall's tau b test. A significance level of 0.000 obtained for most questions highlighted since the calculated significance level ( $P < 0.000$ ) is less than 0.05, so it shows that there are internal alignment and internal correlations between the green and blue space questionnaire items.

As it shows between well-planned and all other items, there is a correlation except the item about suitability for people with disabilities it shows lower correlate. Moreover, a well-designed item shows the strongest (.700) correlation. The type, form, and location of trees and sufficient lighting in green and blue spaces reasonably correlate with the well-planned item. About well-designed item correlates with all items except the last question about whether green and blue spaces are suitable for people with disabilities. This item correlates highly with Sufficient lighting in green and blue. The importance of trees with well-planned, well-designed, and highly with flower arrangement correlates. Flower arrangements and the importance of trees are in high correlation. Also with well-planned and well-designed show good correlation. The number of trees was the item with correlation to most of the items. The type, form, and location of trees have the highest correlation and lowest flower arrangement.

Type, form, and location of trees is the item with correlation with all other items; the table shows with well-planned, well-designed item, number of trees, and enough green and blue spaces in the city are acceptable with the Sufficient lighting in green and blue spaces more than other items in correlation.

Sufficient lighting in green and blue spaces item correlated with all items, and the highest and the lowest are with type, form, and location of trees and suitability of green and blue spaces for people with disabilities. Enough green and blue spaces show correlation with other but not much high. Enough facilities have a reasonable correlation with well-planned and well-designed. There is no correlation between enough facilities and the importance of trees. With flower arrangements correlates but in low level like suitability for people with disabilities. Other items have a reasonable correlation. The last item in the green and blue spaces part is suitability for disabled people, which shows that most of the items do not correlate, and those have been

in a low level like enough facilities and sufficient lighting in green and blue spaces, the highest correlation was with enough green and blue spaces by 0.389.

#### 4.7. Kendall's tau b correlation test of new urban furniture items

To check the correlation of the questionnaire items, Kendall tau b use which in table 26 results from this test for urban furniture items.

**Table 25:** Kendall tau b correlation test, new urban furniture research question

Correlations											
		bus stop shelters	number of trash bins and regular clean	Kiosks are necessary	enough benches in the street	enough benches in green and blue	quality and design of the benches	Pavement quality and design	enough children's playgrounds	enough outdoor exercise equipment in parks	Suitable for people with disabilities
bus stop shelters	Correlation Coefficient	1.000	.415**	.109	.356**	.300**	.252**	.283**	.333**	.337**	.257**
	Sig. (2-tailed)	.	.000	.151	.000	.000	.001	.000	.000	.000	.001
	Order of correlation high 1 to low 10		1	-	2	5	8	6	4	3	7
number of trash bins and regular clean	Correlation Coefficient	.415**	1.000	.119	.401**	.379**	.301**	.345**	.283**	.373**	.350**
	Sig. (2-tailed)	.000	.	.116	.000	.000	.000	.000	.000	.000	.000
	Order of correlation high 1 to low 10	1		-	2	3	7	6	8	4	5
Kiosks are necessary	Correlation Coefficient	.109	.119	1.000	.117	.170*	.118	.063	-.074	-.032	-.023
	Sig. (2-tailed)	.151	.116	.	.119	.025	.118	.406	.327	.673	.763
	Order of correlation high 1 to low 10	-	-		-	1	-	-	-	-	-
enough benches in the street	Correlation Coefficient	.356**	.401**	.117	1.000	.359**	.340**	.389**	.362**	.378**	.412**
	Sig. (2-tailed)	.000	.000	.119	.	.000	.000	.000	.000	.000	.000

	Order of correlation high 1 to low 10	7	1	-		6	8	3	5	4	2
enough benches in green and blue	Correlation Coefficient	.300**	.379**	.170*	.359**	1.000	.437**	.397**	.230**	.329**	.230**
	Sig. (2-tailed)	.000	.000	.025	.000	.	.000	.000	.003	.000	.003
	Order of correlation high 1 to low 10	6	3	8	4		1	2	7	5	7
quality and design of the benches	Correlation Coefficient	.252**	.301**	.118	.340**	.437**	1.000	.282**	.359**	.389**	.291**
	Sig. (2-tailed)	.001	.000	.118	.000	.000	.	.000	.000	.000	.000
	Order of correlation high 1 to low 10	8	5	-	4	1		7	3	2	6
Pavement quality and design	Correlation Coefficient	.283**	.345**	.063	.389**	.397**	.282**	1.000	.405**	.535**	.234**
	Sig. (2-tailed)	.000	.000	.406	.000	.000	.000	.	.000	.000	.002
	Order of correlation high 1 to low 10	6	5	-	4	3	7	120	2	1	8
enough children's playgrounds	Correlation Coefficient	.333**	.283**	-.074	.362**	.230**	.359**	.405**	1.000	.516**	.460**
	Sig. (2-tailed)	.000	.000	.327	.000	.003	.000	.000	.	.000	.000
	Order of correlation high 1 to low 10	5	6	-	4	7	4	3		1	2
enough outdoor exercise equipment in parks	Correlation Coefficient	.337**	.373**	-.032	.378**	.329**	.389**	.535**	.516**	1.000	.292**
	Sig. (2-tailed)	.000	.000	.673	.000	.000	.000	.000	.000	.	.000
	Order of correlation high 1 to low 10	6	5	-	4	7	3	1	2		8
Suitable for people with disabilities	Correlation Coefficient	.257**	.350**	-.023	.412**	.230**	.291**	.234**	.460**	.292**	1.000
	Sig. (2-tailed)	.001	.000	.763	.000	.003	.000	.002	.000	.000	.
	Order of correlation high 1 to low 10	5	3	-	2	7	5	6	1	4	

Table 26 shows the correlation coefficient between urban furniture items. Kendall's tau b correlation coefficient investigated this coefficient correlation. A significance level of 0.000 obtained for most questions highlighted since the calculated significance level ( $P < 0.000$ ) less than 0.05. Hence, it shows internal alignment and internal correlations between the green and blue space questionnaire items and the urban furniture questionnaire.

Item number one bus stop shelter is in correlation (0.415) with the number of trash bins and regular clean, showing it is significant and in highest correlation among all with a bus stop shelter. The correlation coefficient and significance show there is no correlation between bus stop shelters and kiosks are necessary.

The number of trash bins and the regular clean item correlates with all urban furniture items almost in the same level and more with bus stop shelter.

The correlation coefficient and significance show that kiosks' necessity was the item that is not in correlation with all other items.

About enough benches in the street item can say it is in the middle level of correlation with other items and more suitable for people with disabilities. Also, about enough benches in green and blue spaces show the same with all items.

The benches' quality and design have a higher correlate with enough benches in green and blue spaces and with all other items except kiosks are necessary. Furthermore, the same situation for pavement quality and design with kiosks are necessary without correlation. The highest and lowest correlation for pavement quality and design is enough outdoor exercise equipment in parks and suitable people with disabilities.

Enough children's playgrounds with a 0.516 correlation coefficient with enough outdoor exercise equipment in parks have a high correlation in comparing other items.

Enough outdoor exercise equipment in parks reasonably correlates with pavement quality and design and enough children's playgrounds.

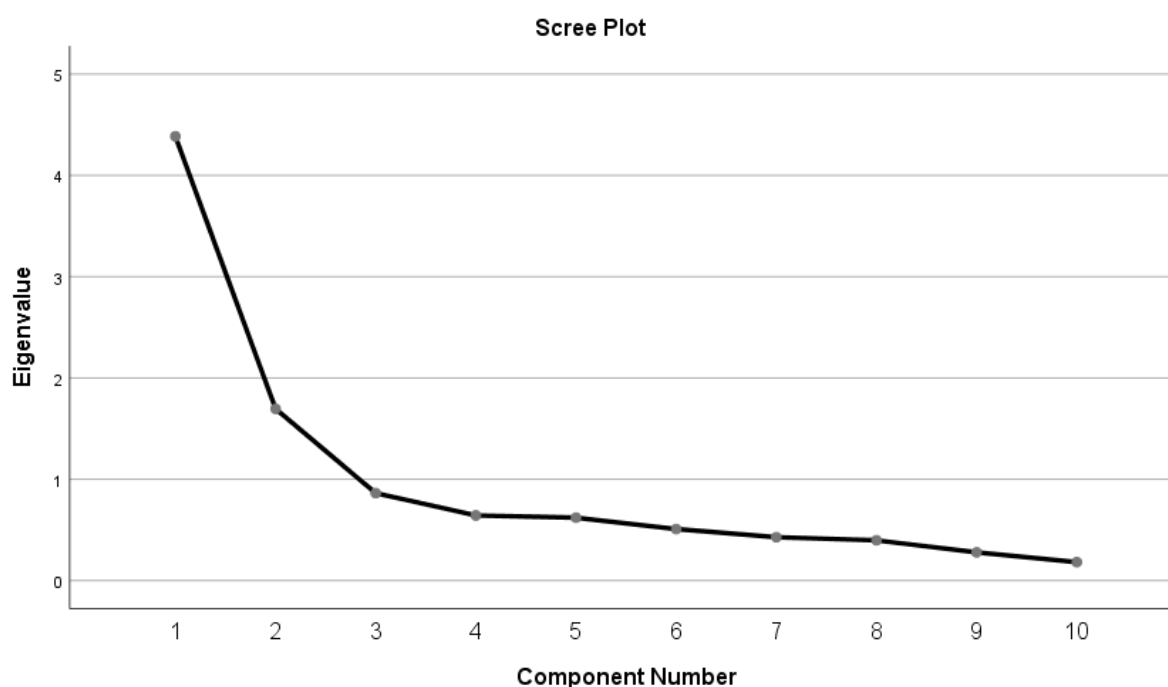
Suitable for people with disabilities correlate with most of the items even not high. The highest correlation is with enough children's playgrounds and the lowest with enough benches in green and blue spaces with 0.460 and 0.230. All the items that did not correlate with the kiosks are necessary.

#### 4.8.Exploratory factor analysis of green and blue space

*Table 26: Bartlett KMO and sphericity test*

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.811
Bartlett's Test of Sphericity	Approx. Chi-Square	516.268
	df	45
	Sig.	.000

Exploratory factor analysis has done by KMO and Bartlett sphericity test with ten green and blue spaces questionnaire. The research tool's principal components analysis Preliminary results showed that all things have the appropriate factor load. Accordingly, the adequacy of Kaiser-Meyer-Olkin sampling (KMO = 0.811) and Bartlett sphericity test (516.268) were significant at the level of (0.000). If the KMO value is appropriate and the Bartlett sphericity test is significant, the correlation matrix is suitable for factor analysis. In the following, data related to variance and specific values and factor analysis data will present.



*Figure 11: Pebble diagram to check the number of factors*

**Table 27: Matrix of research tool components based on 0.3**

Correlation Matrix <sup>a</sup>											
		well-planned	well-designed	Importance of trees	Flower arrangements	Number of trees	Type, form, and location of trees	Sufficient lighting in green and blue	Enough green and blue spaces	Enough facilities	Suitable for people with disabilities
Well-planned	correlartion	1.000	.778	.434	.427	.264	.476	.511	.291	.438	.055
	Sig. (1-tailed)		.000	.000	.000	.002	.000	.000	.001	.000	.276
	Order of correlation high 1 to low 10		1	5	6	8	4	2	7	3	-
well-designed	correlartion	.778	1.000	.394	.390	.372	.497	.598	.416	.498	.143
	Sig. (1-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.060
	Order of correlation high 1 to low 10	1		6	7	8	4	2	5	3	-
Importance of trees	correlartion	.434	.394	1.000	.576	.182	.250	.277	.095	.156	-.012
	Sig. (1-tailed)	.000	.000		.000	.023	.003	.001	.151	.045	.448
	Order of correlation high 1 to low 10	2	3		1	6	5	4	-	7	-
Flower arrangements	correlartion	.427	.390	.576	1.000	.250	.302	.292	.117	.223	-.070
	Sig. (1-tailed)	.000	.000	.000		.003	.000	.001	.102	.007	.224
	Order of correlation high 1 to low 10	2	3	1		6	4	5	-	7	-
Number of trees	correlartion	.264	.372	.182	.250	1.000	.451	.345	.504	.460	.342
	Sig. (1-tailed)	.002	.000	.023	.003		.000	.000	.000	.000	.000
	Order of correlation	7	4	9	8		3	5	1	2	6

	high 1 to low 10										
Type, form, and location of trees	correlartion	.476	.497	.250	.302	.451	1.000	.628	.552	.391	.275
	Sig. (1- tailed)	.000	.000	.003	.000	.000		.000	.000	.000	.001
	Order of correlation high 1 to low 10	4	3	9	7	5		1	2	6	8
Sufficient lighting in green and blue	correlartion	.511	.598	.277	.292	.345	.628	1.000	.442	.528	.253
	Sig. (1- tailed)	.000	.000	.001	.001	.000	.000		.000	.000	.003
	Order of correlation high 1 to low 10	4	2	8	7	6	1		5	3	9
Enough green and blue spaces	correlartion	.291	.416	.095	.117	.504	.552	.442	1.000	.586	.468
	Sig. (1- tailed)	.001	.000	.151	.102	.000	.000	.000		.000	.000
	Order of correlation high 1 to low 10	7	6	-	-	3	2	5		1	4
Enough facilities	correlartion	.438	.498	.156	.223	.460	.391	.528	.586	1.000	.315
	Sig. (1- tailed)	.000	.000	.045	.007	.000	.000	.000	.000		.000
	Order of correlation high 1 to low 10	5	3	8	7	4	6	2	1		7
Suitable for people with disabilities	correlartion	.055	.143	-.012	-.070	.342	.275	.253	.468	.315	1.000
	Sig. (1- tailed)	.276	.060	.448	.224	.000	.001	.003	.000	.000	
	Order of correlation high 1 to low 10	--	-	-	-	2	4	5	1	3	



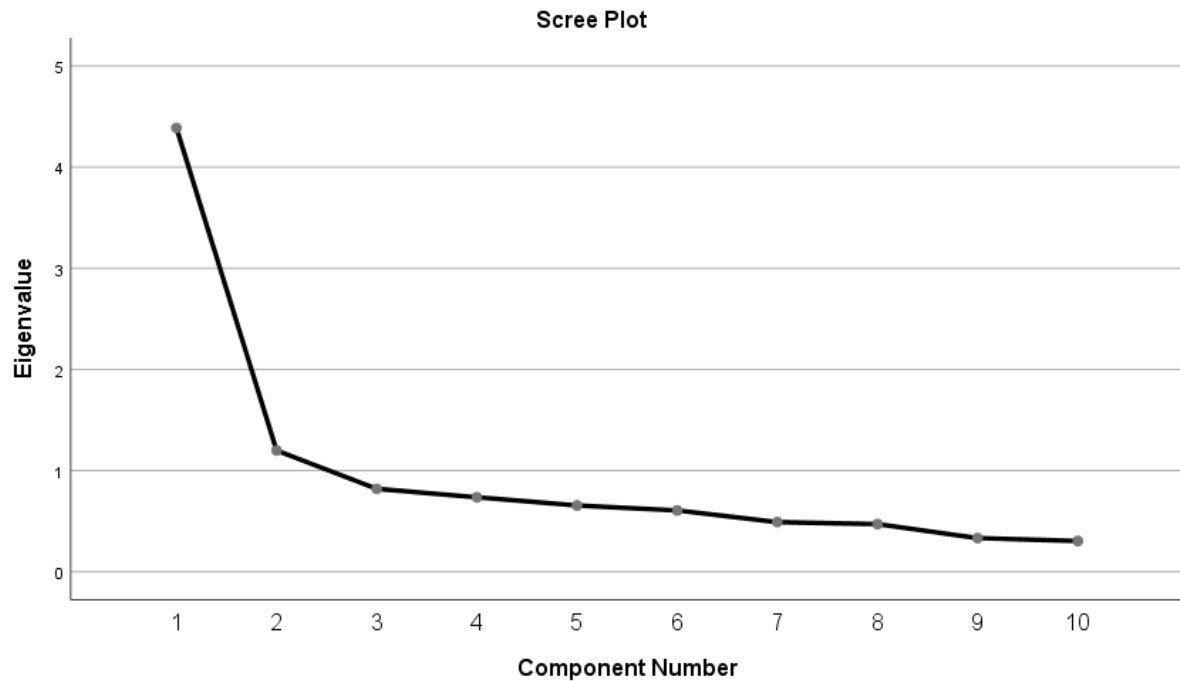
Table 27 shows the matrix correlation of green and blue spaces items; it shows the well-planned item has significant correlation and averagely high with other items; the strongest correlation with the well-designed (0.778) item and lowest correlation with the number of trees (0.264). The highest correlation for the well-designed item after the well-planned item is with sufficient lighting in green and blue spaces (0.598) item. The importance of trees item has a strong correlation with flower arrangement item (0.576). The flower arrangement item has the strongest correlation with the importance of trees (0.576), followed by well-planned and well-design (0.427) and (0.390). Also, flower arrangement has a reasonable correlation with trees' type, form, and location (0.302). The number of trees has the highest correlation with an item about enough green and blue spaces (0.504). Type, form, and location of trees with (0.628) shows a high correlation with sufficient lighting in green and blue spaces. Sufficient lighting in green and blue spaces also has a high correlation (0.528) with enough facilities in the green and blue spaces. Enough facilities item has a significant correlation with green, and blue spaces are suitable for people with disabilities.

#### 4.9.Exploratory factor analysis of urban furniture

*Table 28: Bartlett KMO and sphericity test*

<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.865
Bartlett's Test of Sphericity	Approx. Chi-Square	405.303
	df	45
	Sig.	.000

Exploratory factor analysis of urban furniture with ten items by KMO and Bartlett tested. The research tool's principal components analysis Preliminary results showed that all things have the appropriate factor load. Accordingly, the adequacy of Kaiser-Meyer-Oklin sampling (KMO = 0.865) and Bartlett sphericity test (405.303) at the level of (0.000) significantly. If the KMO value is appropriate and the Bartlett sphericity test is significant, the correlation matrix is suitable for factor analysis. In the following, data related to variance and specific values and factor analysis data will present.



**Figure 12:** Pebble diagram to check the number of factors

**Table 29:** Matrix of research tool components based on 0.3

Correlation Matrix <sup>a</sup>											
		bus stop shelters	number of trash bins and regular clean	Kiosks are necess ary	enough benche s in the street	enough benche s in green and blue	quality and design of the benche s	Pavem ent quality and design	enoug h childre n's playgr ounds	enough outdoo r exercis e equipm ent in parks	Suitable for people with disabiliti es
bus stop shelters	correlartion	1.000	.489	.142	.399	.383	.319	.363	.406	.400	.303
	Sig. (1-tailed)		.000	.061	.000	.000	.000	.000	.000	.000	.000
	Order of correlation high 1 to low 10		1		4	5	7	6	2	3	8
number of trash bins and regular clean	correlartion	.489	1.000	.126	.465	.457	.388	.427	.349	.453	.414
	Sig. (1-tailed)	.000		.085	.000	.000	.000	.000	.000	.000	.000
	Order of correlation high 1 to low 10	1		-	2	3	7	5	8	4	6

Kiosks are necessary	correlartion	.142	.126	1.000	.134	.189	.142	.077	-.075	-.031	-.027
	Sig. (1-tailed)	.061	.085		.072	.020	.060	.203	.207	.369	.386
	Order of correlation high 1 to low 10	-	-		-	1	-	-	-	-	-
enough benches in the street	correlartion	.399	.465	.134	1.000	.415	.426	.462	.425	.449	.469
	Sig. (1-tailed)	.000	.000	.072		.000	.000	.000	.000	.000	.000
	Order of correlation high 1 to low 10	7	2	-		6	4	3	5	3	1
enough benches in green and blue	correlartion	.383	.457	.189	.415	1.000	.485	.484	.298	.401	.267
	Sig. (1-tailed)	.000	.000	.020	.000		.000	.000	.000	.000	.002
	Order of correlation high 1 to low 10	6	3	-	4		1	2	7	5	8
quality and design of the benches	correlartion	.319	.388	.142	.426	.485	1.000	.365	.440	.473	.359
	Sig. (1-tailed)	.000	.000	.060	.000	.000		.000	.000	.000	.000
	Order of correlation high 1 to low 10	8	5	-	4	1		6	3	2	7
Pavement quality and design	correlartion	.363	.427	.077	.462	.484	.365	1.000	.484	.609	.293
	Sig. (1-tailed)	.000	.000	.203	.000	.000	.000		.000	.000	.001
	Order of correlation high 1 to low 10	6	4	-	3	2	5		2	1	7
enough children's playgrounds	correlartion	.406	.349	-.075	.425	.298	.440	.484	1.000	.615	.517
	Sig. (1-tailed)	.000	.000	.207	.000	.000	.000	.000		.000	.000
	Order of correlation high 1 to low 10	6	7	-	5	8	4	3		1	2
enough outdoor exercise equipment in parks	correlartion	.400	.453	-.031	.449	.401	.473	.609	.615	1.000	.360
	Sig. (1-tailed)	.000	.000	.369	.000	.000	.000	.000	.000		.000
	Order of correlation high 1 to low 10	7	4	-	5	6	3	2	1		8
Suitable for people with disabilities	correlartion	.303	.414	-.027	.469	.267	.359	.293	.517	.360	1.000
	Sig. (1-tailed)	.000	.000	.386	.000	.002	.000	.001	.000	.000	

	Order of correlation high 1 to low 10	6	3	-	2	8	5	7	1	4	
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Table 29 shows that most of the items of the urban furniture questionnaire correlate with each other. The bus stop shelter item has the highest correlation with the number of trash bins and regular clean of them with (0.498) and the lowest correlation with the suitability of urban furniture with people who have disabilities (0.303). The number of trash bins item has an averagely good correlation with all items of urban furniture except item number 3 (kiosks are necessary). Kiosks are necessary correlates only with enough benches in green and blue spaces.

Items about enough benches in the street and green and blue spaces correlate with all other items. The table also shows that the quality of benches is also averagely high with other items. One of the strongest correlations (0.609) for pavements quality and design item is enough outdoor exercise equipment in the park. The item about enough children's playground in the city has a good correlation with other items; highest correlation with enough outdoor exercise equipment in parks (0.615) and then with the suitability of urban furniture for people with disabilities. Enough outdoor exercise equipment in parks strongly correlates with enough children's playground in the city and pavement quality and design with (0.615) and (0.609). Moreover, an averagely high correlation (correlation>0.4) with all other items except kiosks are necessary.

#### 4.10. Regression of green and blue space questionnaire and urban furniture questionnaire with research variables

**Table 30:** Estimating the coefficients of the final model of linear regression of research variables

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.494	.776		3.213	.002
	Well-planned	.020	.184	.016	.109	.914
	well-designed	.148	.212	.113	.699	.486
	Importance of trees	-.080	.159	-.059	-.504	.615
	Flower arrangements	-.010	.174	-.007	-.057	.955
	Number of trees	.496	.137	.414	3.615	.000
	Type, form and location of trees	-.299	.192	-.223	-1.562	.122

Sufficient lighting in green and blue	.003	.161	.003	.021	.983
Enough green and blue spaces	.219	.171	.180	1.284	.202
Enough facilities	-.028	.163	-.024	-.174	.862
Suitable for people with disabilities	.182	.122	.160	1.494	.138
bus stop shelters	-.007	.153	-.005	-.048	.962
number of trash bins and regular clean	.150	.156	.119	.966	.336
Kiosks are necessary	.166	.104	.151	1.588	.116
enough benches in the street	-.106	.147	-.086	-.726	.470
enough benches in green and blue	-.163	.155	-.127	-1.048	.297
quality and design of the benches	-.115	.165	-.091	-.695	.489
Pavement quality and design	-.352	.162	-.271	-2.166	.033
enough children's playgrounds	-.015	.161	-.013	-.092	.927
enough outdoor exercise equipment in parks	.037	.174	.030	.213	.832
Suitable for people with disabilities	-.217	.155	-.166	-1.398	.165

Table 34 estimation of the coefficients of the final regression model above shows that the studied variables are significant, and each of them has different weights. The above table's standard impact coefficients show that item about the number of trees (G.B 5) of the Green and Blue Space Questionnaire (Beta = 0.414) has a significant coefficient (sig = 0.000), indicating confirmation in this part of the test. Item about pavement quality and design (U.F 7) of the urban furniture questionnaire (Beta = 0.271) with a Significance coefficient (sig = 0.033) obtained shows the confirmation and Significance of two items; number 5 (Number of trees) of green and blue space and number 7 (Pavement quality and design) of urban furniture questionnaires items.

**Table 31:** Model summary of multivariate regression between citizens' satisfaction with the green and blue space and urban furniture

Model Summary								
R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
.504 <sup>a</sup>	.254	.104	1.260	.254	1.689	20	99	.048

**Table 32:** Estimating ANOVA linear regression coefficients of research variables

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.623	20	2.681	1.689	.048 <sup>b</sup>
	Residual	157.169	99	1.588		
	Total	210.792	119			

Table 31 and 32 show the correlation coefficient between the study variables to find the citizens' satisfaction with the green and blue space and urban furniture. All variables tested by using the Pearson correlation coefficient, the correlation coefficient was  $r = 0.679$ , and the significance level was 0.000 sig. Since the calculated significance level ( $P < 0.000$ ) is less than 0.05, it is confirmed. According to the regression summary of the research variables, the citizens of Sari are satisfied with the green and blue space, and urban furniture in Sari is confirmed.

#### 4.11. Qualitative analysis

The qualitative answers are listed below by the most common answers about famous parks in Sari; respondents could not answer very carefully because of the pandemic situation and have done online interview to get answers without pressure and stress of outside with the people who answered already to the questionnaire. The respondents' general overview of Sari's famous parks and their positive and negative comments about each are in the table below. The typical answer about the most favourite park was Mellal and Boustan Velayat, and the least favourite was Azadegan park even they left positive comments about this park, and some agreed on Aftab park as a most and some agreed on the least favourite park.

About famous park list of positive and negative comments achieved below the comments are:

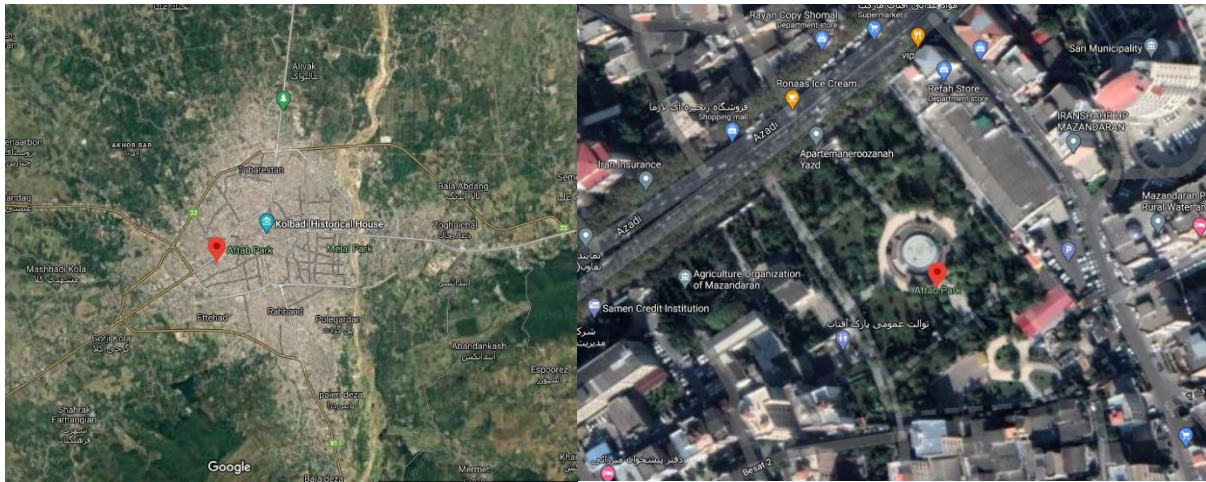
##### 4.11.1. Assessing parks and urban furniture

##### 4.12. List of famous parks in Sari with the qualitative comments:

###### 4.12.1. Aftab park:

This park is located along Azadi Boulevard from Imam Square in Sari and the western part (inside) of Sari city. The area of Aftab Sari Park is about 1500 square meters. Due to being in the city, this park welcomes travellers, especially in spring and summer. This park includes a 7-dimensional cinema, a car track, children's play equipment, a coffee shop park, a skating rink, sports equipment, etc. This city park is a good place for the elderly to relax and have fun and a family hangout for night entertainment.





**Figure 13:** Aftab park geographical location



**Figure 14:** Aftab park gate (municipality website)



**Figure 15:** Aftab park location (Sari municipality website)



**Figure 16:** Aftab park children playground (municipality website)



**Figure 17:** Aftab park walking area and benches (municipality website)



**Figure 19:** Aftab park (municipality website)



**Figure 18:** Aftab park view from gate (municipality website)

### **Aftab park comments:**

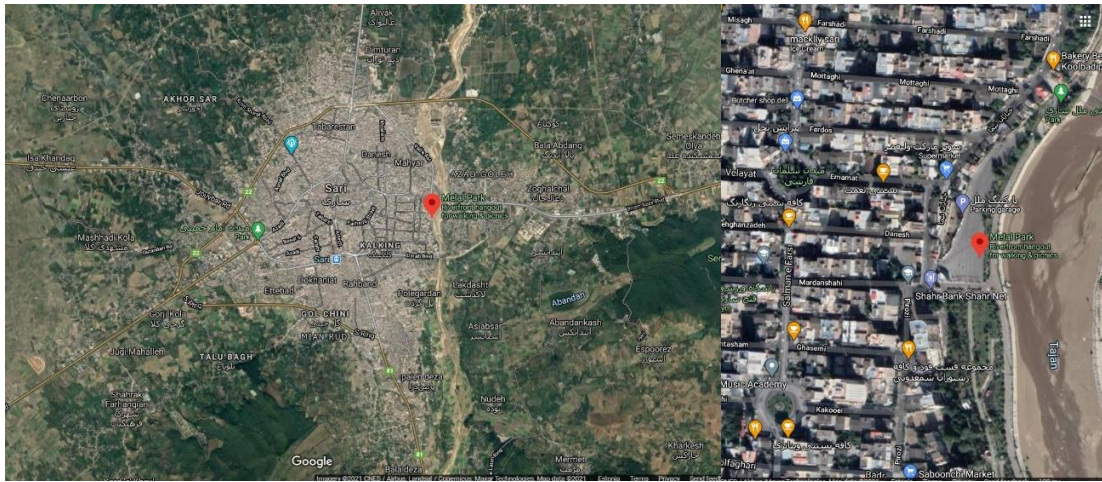
- Because of the park's location, being close to the cinema, shopping centre, there are too many people in the park, and it is crowded, it was also an advantage as everything is in hand.
  - Some respondents also mention noisy background and atmosphere.
  - A place for betting, illegal activity of some people sometimes is so dangerous because of excitement and sensitivity to win and lose in betting and using slanderous words even when kids are around
  - according to the central location of the park and few parking lots, in crowded times such as afternoon and evening, it is challenging to find a place to park the car
  - There are different facilities such as an amusement park for children and young people, grassland suitable for a picnic for family, sports equipment for the middle-aged and the elderly which made the park suitable for all generation (children, young, middle-aged, and older people)
  - There are more than three public restrooms on a different side of the park, making it easier to access, and people are not obligated to walk too long to have accessibility to the restroom, as the park is big and crowded.
  - There is no restroom for disabled people, and there is no place for changing diapers.
  - They are late to replace old and broken equipment and sometimes this equipment remains even one year break in the park and make them useless.
- Chaos and disorder on vacation; there are many tourists from different parts of the country who camp outside the park.
- Possibility to go all family together during the day and night because of the location and accessibility



- There is no entrance lock; people can enter any time, and as the park is free of charge, it made it suitable also for the middle and weak social strata of society
- Park guard are always walking in the park, which increased security and safety.
- there are Good facilities, Good lighting at night, good and modern design which attract many people.
- Possibility to have a picnic during the night
- there are Hotel and hostel nearby for tourists with different prices for different society sections, so people have a wide choice.
- Tent platform
- There is also Camping possibility around the park for people who want to not spend money on the hotels and hostels
- Park locates in the centre of the city, so it is easy to access even for people who have no car and have to use an urban taxi.
- There are different pizzeria and restaurants nearby park, so those who want to spend all day in the park have no problem with food, and also they have a wide choice according to the variety of restaurants and sandwich shops

#### **4.12.2.Melal park**

Melal park is located on the Tejen River banks in Sari with 35-hectare land with 2 km on the river's western bank. This park is a recreational place for people and travellers in the north to spend their leisure time. This recreational complex consists of an artificial lake, river (blue spaces), and green space, and the second phase of this recreational complex is 550 hectares. This park is also called the most beautiful and largest amusement complex in the north of Iran. This complex is called the Mellal Park (Nations park) because of all the world countries' flags. It has facilities such as an artificial island, suspension cable bridge, green space, sports equipment, sidewalk and bike path, jet ski, boat, fishing place, traditional house, and parking with a capacity of 2000 cars.



**Figure 20:** Melal park geographical location



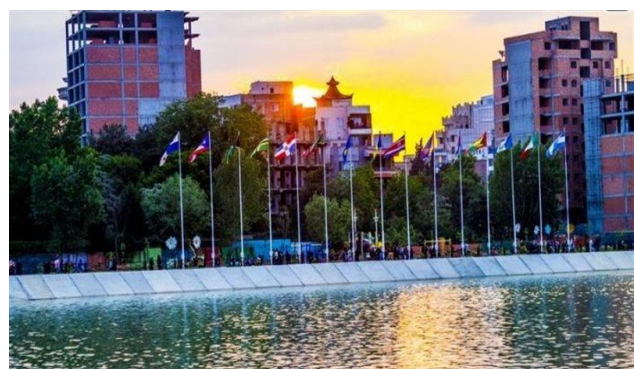
**Figure 21:** Melal park riverside walking area (municipality website)



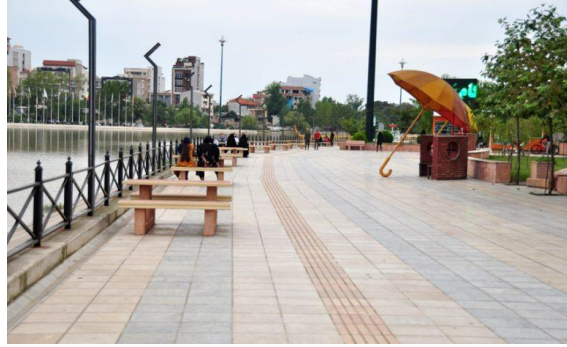
**Figure 22:** Melal park overview along the tejen river (municipality website)



**Figure 23:** Melal park artificial island (municipality website)



**Figure 24:** Melal park a part world countries flags (municipality website)



**Figure 25:** Melal park walking area and benches (municipality website)

### **Melal park comments:**

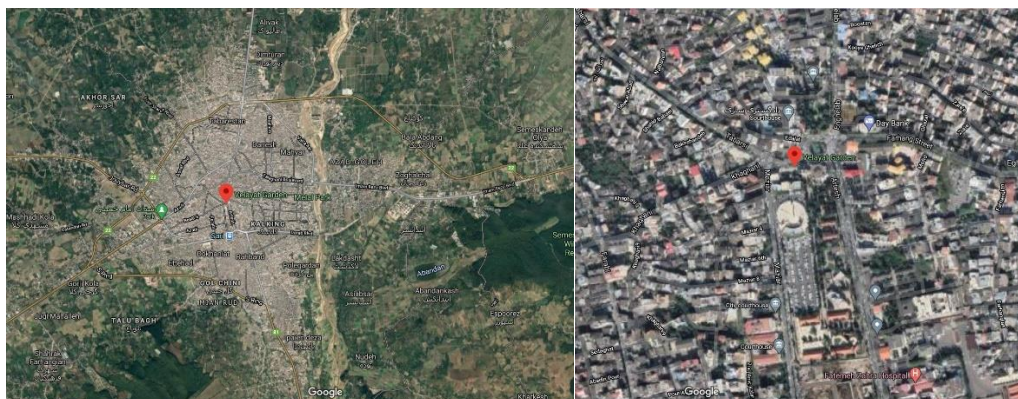
- The park's size is so big, and many different spaces are for different purposes, such as biking road, walking road, grassland, etc. designed.
- It is located beside the city's biggest river and gives a beautiful view of the park.
- The massive size of the park and many different sections can be used for different purposes like running, biking, picnic, games, and sports.
- It locates out of the centre, and it has its parking lot, even if it is too crowded there are parking lot spaces in the main street so people will not face problems with parking
- It is suitable for all generation and as the children's playground is far from the riverside made
- The park suitable especially for people who like to spend time in a not noisy place,
- The park has a Long and wide walking path with benches in each 100 meter, so older ages who need to walk have the possibility to walk and have sit when they feel tired during the walk
- There are sports facilities for different ages and it attracts many people to visit there and do sport in an open area without paying.
- The park has a special zone for camping and also facilitated by Drinking water in different zones.
- There are several restrooms in different locations, which is facilitated with restrooms for disabled people and also the place for Changing diapers
- The permanent presence of park guards and janitors keep the park safe and clean.
- There is much light pol which gives Perfect lighting at night.
- Holding cultural conferences such as book festivals, fine arts festivals to promote the cultural level and popularisation of reading
- There is a circus tent to provide entertainment for people which attracts many people there
- As the park located far from the city centre and urban taxi does not pass from there, for those who have not car it is difficult to reach there



- The park is so huge, and there is a spot by homeless people and addicted people who spend the night there occupied and make the park unsafe, especially at night.
- The park locates near the river, and there is a risk of flood in the rainy season, especially monsoon rains.
- Because of the park's huge size for those who are their first visit, it can be challenging to find the entrance.
- Because of its location, accessibility to hypermarkets and shopping centres is not easy.
- People who have no car will have problems finding their favourite restaurant.

#### 4.12.3.Velayat garden

The Boustan Velayat park with ten cultural, social, and recreational spaces in 6 hectares of the former barracks of Shahid Faramarzi belonging to the army put into operation. The park has an amphitheatre, a digital library, a scholars 'house, a large hall, an artists' house and gallery, a mosque, a museum, and a children's play area. Two water features at the beginning and end of this park located, connected by a 345-meter-long waterway, which is also the main sidewalk.



**Figure 26:** Velayat garden geographical location



**Figure 27:** Velayat garden amphitheater and library ([www.khazarnam.ir](http://www.khazarnam.ir))



**Figure 28:** Velayat garden gate ([www.khazarnam.ir](http://www.khazarnam.ir))



**Figure 30:** Velayat garden waterway  
([www.khazarnam.ir](http://www.khazarnam.ir))



**Figure 29:** Velayat garden hall  
([www.khazarnam.ir](http://www.khazarnam.ir))



**Figure 31:** Velayat garden at night time  
([www.khazarnam.ir](http://www.khazarnam.ir))



**Figure 32:** Velayat garden at night time  
([www.khazarnam.ir](http://www.khazarnam.ir))

Velayat garden comments:

- the park locates in the heart of the city, it is very modern designed and looks fantastic.
- Every weekend night, especially in the spring and summer, there are events and stand up comedy shows which people can enjoy and have fun for free.
- There is a possibility of doing different activities for all generations, such as a playground for kids, sports facilities for teenagers and the elderly, etc.
- it has provided job opportunities for unemployed people such as food stalls, bars and also for peddlers around the park
- because of its amazing location and police office located beside the park, it becomes so safe and secure.
- there is a long waterway that passes through the park's length and gives beautiful views of the park.
- all the facilities are of high quality and any problems for them solves immediately



-most of the time hard to find car parking, there is parking nearby, but it should pay per hour, which is not cheap

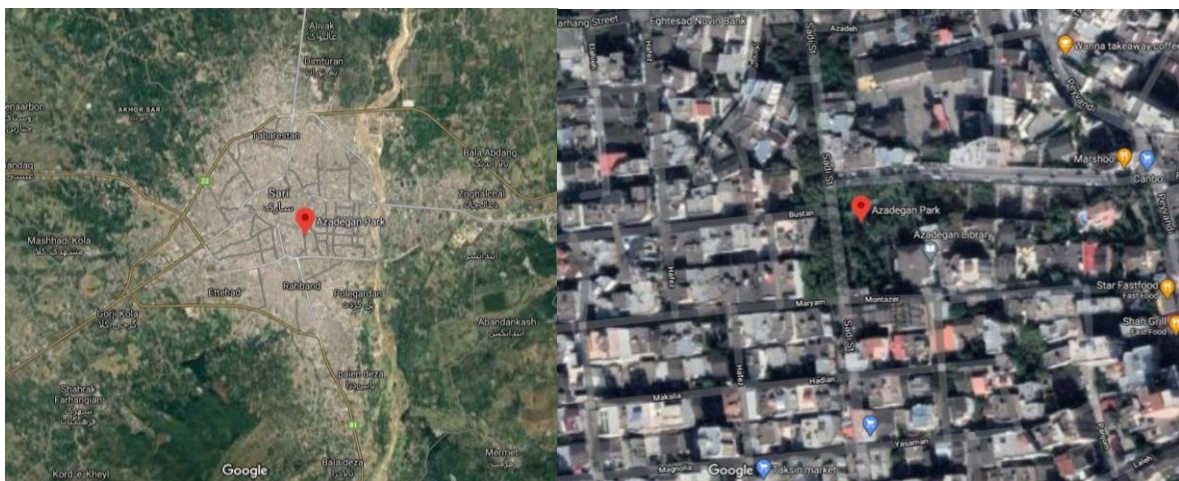
-Every time crowded

-Young generation gathering in a cosy spot and feel not suitable for kids as the park in some parts has really block view because of walls and buildings inside

-block view because of the wall surrounding the park, the park has stone barriers where has no wall, and the gates are the way to get in

#### 4.12.4. Azadegan Park

Azadegan Park in Sari, with an area of 4755 meters, was established in 1998 and located in Farhang Street - Saadi Street near Farhang Bazaar. Azadegan Sari Public Library also located in this park.



**Figure 33:** Azadegan park geographical location



**Figure 34:** Azadegan park entrance  
([www.khazarnam.ir](http://www.khazarnam.ir))



**Figure 35:** Azadegan walking path  
([www.khazarnam.ir](http://www.khazarnam.ir))



**Figure 37:** Azadegan library  
([www.khazarnam.ir](http://www.khazarnam.ir))



**Figure 36:** Azadegan park overview  
([www.khazarnam.ir](http://www.khazarnam.ir))

### **Azadegan park comments:**

- The park is located in one of the most famous streets in the city and always easy to access taxi, close to reaching the main street by walk.
- The park's size is tiny and safe even at night as no blind spot and apartments surrounding it.
- A library in the park made it a good place for students who like to study calm and quiet.
- There is a small playground for children, and the park located in the residential area made it a good place for parents who have kids
- As the park is tiny, there is not that much facility in it. Moreover, it is suitable for those who like to spend time in the library or sit in the green and quiet environment.
- There is no parking lot, and also the street beside the park has to pay to park and always full
- Actually, it is more like a local park, and people who live there go to this park
- Even the playground for kids is limited to primary and simple thing such as small swing and side

**Table 33:** Summary of qualitative answers about parks

List of parks	Positive comments	Negative comments
	<ul style="list-style-type: none"> <li>- Suitable for all generation (children, young, middle-aged, and older people)</li> <li>-Public Restroom,</li> </ul>	<ul style="list-style-type: none"> <li>-Too many people</li> <li>- Some spaces in the park are a place for spending hopeless and homeless people; they wandering around, looking and watching people</li> </ul>

Aftab park	<ul style="list-style-type: none"> <li>-Possibility to go all family together during the day and night because of the location and accessibility</li> <li>-There is no entrance lock; every time open and free of charge</li> <li>-Security is high, and feeling safe</li> <li>-Good facilities</li> <li>-Good lighting at night</li> <li>-Possibility to have a picnic during the night</li> <li>-Hotel nearby</li> <li>-Tent platform</li> <li>-Camping possibility</li> <li>-Easy access</li> </ul>	<ul style="list-style-type: none"> <li>- Noisy background and atmosphere</li> <li>-A place for betting, illegal activity of some kind of people sometimes is so dangerous even when kids are around</li> <li>-Few parking lots</li> </ul>
Mellal Park	<ul style="list-style-type: none"> <li>-Big size of the park</li> <li>-River inside</li> <li>-Different kind of activity</li> <li>-Long walking path</li> <li>-Sport facilities</li> <li>-Enough benches</li> <li>-Clean</li> <li>-Picnic area</li> <li>-Tent platforms</li> <li>- Drinking water and camping site to stay</li> <li>-Enough parking lots</li> <li>-Perfect lighting at night</li> </ul>	<ul style="list-style-type: none"> <li>-Location far from city centre</li> <li>-Not feel safe because of the size and homeless people</li> <li>-Distance from city centre</li> <li>-Flood risk area</li> <li>-Not easy to find the entrance for the first time</li> </ul>
	<ul style="list-style-type: none"> <li>-Good location</li> <li>-Event and gathering people a lot</li> </ul>	<ul style="list-style-type: none"> <li>-Hard to find car parking</li> <li>-Every time crowded</li> </ul>



Boustan Velayat	<ul style="list-style-type: none"> <li>-Different activity possibility</li> <li>-Considering all generation in design and services</li> <li>-Feeling safe and secure</li> <li>-Waterway and feeling fresh</li> <li>-High quality of facilities</li> </ul>	<ul style="list-style-type: none"> <li>-Young generation gathering in a cosy spot and feel not suitable for kids</li> <li>-block view because of the wall surrounding the park</li> </ul>
Azadegan park	<ul style="list-style-type: none"> <li>-Cozy</li> <li>-Accessible</li> <li>-Library</li> <li>-Not crowd</li> <li>-Safe</li> </ul>	<ul style="list-style-type: none"> <li>-Small size</li> <li>-Few facilities</li> <li>-No parking lots</li> </ul>

#### 4.13.New urban furniture in Sari

Sari municipality has done several projects about urban regeneration and installing new urban furniture in the city. Such as new pavement construction, removing old stone sitting area and putting new benches, separating trash by separate bins and regular cleaning, installing bus shelter in bus stops, etc. Below, there are a few old and new versions of urban furniture in Sari, which people in qualitative comments liked.



**Figure 38:** Old and new pavement ([www.mazanshoro.ir](http://www.mazanshoro.ir))



**Figure 39:** Old and new benches in Sari ([www.mazanshoro.ir](http://www.mazanshoro.ir))



**Figure 40:** Old and new trash bins ([www.mazanshoro.ir](http://www.mazanshoro.ir))



**Figure 41:** Street new construction with flower arrangement ([www.khazarnama.ir](http://www.khazarnama.ir))





**Figure 42:** Old phone kiosk and new kiosks ([www.mazanshora.ir](http://www.mazanshora.ir))



**Figure 43:** Old and new bus stop ([www.mazanshora.ir](http://www.mazanshora.ir))

The most common comments about new urban furniture were positive, and people appreciate the recent projects of the municipality. After installing new urban furniture, people said they feel better when they walk in the city on the new pavement. The pavement quality and design were outstanding compared to the old versions; they liked the new trash bins separating the trash, which shows consideration of the ecosystem. The other thing people liked was the new urban plan and design of the roads and boulevards, which is Sari municipality has done in several phases by painting and planting the boulevards and when driving their car or by public transportation, by looking at the boulevard arrangement by flowers and trees they feel good and enjoy.

## 5. Discussion and conclusion

In conclusion, the research data showed people are generally satisfied with the green and blue spaces current situation; there are not terrifically tremendous and not horribly bad. The comments and feedback were averagely positive, which is a good point of green and blue spaces details and items. There was a significant correlation among items, which is a stronger correlation between the well-planned and well-designed green and blue spaces with the number of trees. Generally, the green and blue spaces with a high correlation score showed they planned and designed very well, as the component about the number of trees and form, shape and location of the trees and flower arrangement items also were above average level of correlation.

There was a meaningful relationship between gender (females) and the importance of trees in green and blue spaces in the satisfaction of green and blue spaces between some demographic data and items. Another one is between marital status (people who are married) with the number of trees in the green and blue spaces. Marital status also has a relationship with the suitability of green and blue spaces for people with disabilities. Another relationship is between the level of education (people with higher education) with the item about green and blue spaces are well-designed. All those data show that females married with higher education have significant relation with green and blue spaces.

About another subject of the study, are citizens satisfied with the new urban furniture or not?

For urban furniture, people are averagely satisfied with the new urban furniture which installed in the different part of the city and the running projects of the municipality; the items of urban furniture showed a significant correlation among all items, and it was a relationship between gender female and enough benches in the streets item and the quality and design of benches.

The qualitative feedback about parks qualification in Sari showed. Accessibility, safety, design, facilities and water source were the most important reason to visit the parks (Bahrini, Bell and Mokhtarzadeh, 2017) did the study about 16 parks in Tehran and found a good range of preferences; this research found not very high range of preferences in compare of people in Tehran.

Finally, this study tried to provide scientific and practical solutions to achieve the objectives of this research by studying the theoretical foundations and background of the research and implementing the research variables. This work does not repeat the work of other researchers, and this research becomes the background of future researches. This research did not cover all

details of green and blue spaces and also all urban furniture which other researchers can cover other aspects of these variables.

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## \*Appendix

Questionnaire of citizens' satisfaction with green and blue spaces and new urban furniture in Sari

Dear respondent:

Hello, the present questionnaire is about research entitled " citizens' satisfaction with green and blue spaces in Sari and new urban furniture", which I am carrying out as part of my master's degree at the Estonian University of Life Sciences.

Green spaces such as woods, meadows, and parks and blue spaces such as rivers, lakes, and sea.

Thanks for giving your time; please answer the questions carefully. The survey is completely anonymous. All results will be confidential, and no information which could identify you is collected.

Thanks for your good cooperation. For more information or if you have questions, please contact me, N.Rezvani at (nn.rezvani90@yahoo.com)

### **First, please tell me a little about yourself:**

1.Gender:      Male   ☐                      Female ☐

2.Occupation:   Employed ☐    Unemployed ☐    Homemaker ☐    Retired ☐    Student ☐

3.Marital status:   Single ☐                      Married ☐

4.Age group:    18-29 ☐              30-39 ☐              40-49 ☐              50-59 ☐              60-69 ☐              +70 ☐

5.Education:    Elementary ☐              High school ☐              Diploma ☐              Higher education ☐

6.Do you have a disability:    Yes ☐                      No ☐

### **Green and Blue spaces**

For the next section, please indicate using the scale the degree to which you agree or disagree with the following statements and add any comments you would like to explain your answers?

1. The green and blue spaces of Sari are well-planned?

☐ Completely disagree   ☐ Disagree   ☐ Neither agree nor disagree   ☐ Agree   ☐ Completely agree

Comment:
----------

2. The green and blue spaces of Sari are well-designed?

☐ Completely disagree   ☐ Disagree   ☐ Neither agree nor disagree   ☐ Agree   ☐ Completely agree

Comment:
----------

3. Trees along urban boulevards and streets are important as a part of urban green?

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

4. Flower arrangements are important for the attractiveness of the city?

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

5. There are sufficient numbers of trees in the city

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

6. The type, form and location of the trees are suitable for the settings

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

7. There is sufficient lighting in the green and blue spaces at night

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

8. There are enough green and blue spaces in the city

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

9. The facilities (parking lots, picnic shelters, restrooms, etc.) are enough in green and blue spaces

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

10. Urban parks and green and blue spaces are suitable for people with disabilities?

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

Now please state what is your most favourite green or blue space in the city and why:

Answer:

What is your least favourite green or blue space in the city and why:

Answer:

How many times a week do you use green or blue spaces?

Answer:

-Do you have any suggestions as to how the city authorities could further improve the green and blue spaces?

Answer:

### Urban Furniture

How much do you agree or disagree with the following statements?

1.The bus stop shelters are convenient and suitable

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

2.The number of trash bins are sufficient, and they are regularly emptied

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

3. Phone kiosk are necessary for the city and citizens

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

4. There are enough benches in the streets

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

5.There are enough benches in parks and blue spaces

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

6.The quality and design of the benches are good and convenient

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

7. Pavement quality and design are quite good

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

8. There are enough children's playgrounds in the city

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

9. There is enough outdoor exercise equipment in parks

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment:

10. Urban furniture is suitable for people with disabilities?

☐ Completely disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Completely agree

Comment: